CONTENTS

JUNE, 1926

Honey Markets		352-353
Editorials		357-359
Queen-Cell Building	Jay Smith	360-363
Strong Colonies for Comb Honey	E. S. Miller	363-364
Bees at Chautauqua Audiences	E. R. Root	365-367
Penetration by Disinfectants	P. R. Needham	367-369
Co-operation Among Beekeepers	E. F. Phillips	370-371
Preparing for Comb Honey	M. A. Gill	371-372
Central Extracting Plant	J. L. Byer	372-373
Requeening Automatically	C. S. Engle	373-374
Overcoming Cold Wind	R. Beatrice Lane	374
Siftings	J. E. Crane	375
From Foreign Lands		376
From North, East, West, and South		377-381
Heads of Grain from Different Fields		382-383
Talks to Beginners	Geo. S. Demuth	384-386
Gleaned by Asking	Geo. S. Demuth	387-388
Just News		389
Bees, Men, and Things		390
A. I. Root's Story of His Own Life		391-392
Sour Honey Department		398-415

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HONEY MARKET

U. S. GOVERNMENT REPORT
Information from Producing Areas (first half of May)

CALIFORNIA: Southern California—Cool, cloudy and foggy weather since the last report has greatly hindered bees from gathering nectar. On the coast slope of San Diego County, in fact, most bees have had to be fed because of the weather. Quite a number of swarms reported. Bee diseases that have appeared recently are being eliminated as rapidly as possible. On the desert slope of San Diego County rain has been heavier than on the coast. White sage is yielding well, but in some instances the nectar is being darkened by a mixture of wild plum. Mesquite bloom is reported lighter than usual. First extracting of honey is now on. Wild alfalfa is blooming well, and sumac looks promising. For the county as a whole, a large crop of buckwheat and sage honey is looked for. In the orange belt the outlook is for a good sage crop. Yields of orange honey have been light, ranging, according to reports received, from 15 to 40 lbs. per colony. Some thin orange honey has been extracted and sold at 9½-10c per lb. Beeswax is in demand at 35-37c per lb. Central California—Considerable swarming has been reported. Some honey has been coming in and crop prospects continue bright. Recent showers will prove beneficial. Northern California—The spring flow is now over, and good colonies have secured 60-100 lbs. from fruit bloom and mustard, of light amber color. Little demand for honey, and no sales reported. Beeswax has moved at 34c per lb. cash, 35c per lb. in trade, for light; 30c per lb. for dark.

PACIFIC NORTHWEST—The season is well in advance of the normal year, two to four weeks. Swarming reported as early as April 15. Recent soaking rains have done much for vegetation. Crop outlook is excellent. Very little European foul brood reported this year, but more American foul brood than usual. Very little demand reported for honey, even at price reductions. Several cars remain unsold, but no carlot sales reported. Ton lots white alfalfa and sweet clover reported sold at 8-10c per lb. Car comb honey sold for $3.75 for fancy, $3.25 per case for choice. Beeswax is said to be in demand at 40-45c per lb.

INTERMOUNTAIN REGION—Bees are generally building up on fruit bloom, dandelions, and pussy-willows. Some colonies reported having 9 or 10 frames of brood. In some sections, however, rainy or cold weather with hard winds has prevented bees from working, and feeding is necessary. Many beekeepers are buying package bees to build up their colonies. A few colonies reported preparing to swarm. Two cars white extracted reported sold recently on delivered basis that would net about 8c per lb. f. o. b. Some are said to be reducing quotations sharply in order to attract purchasers. 60s have sold at 8½-10c per lb.; few small pails, 12½c per lb. No. 1 white comb reported moved at $4.00 per case. Beeswax has sold at 40c per lb.

TEXAS—Swarming has generally been reported as among the worst in years, and many colonies are reported weak in bees and stores. Package shipments have been somewhat retarded because of so much rain. Demand for queens reported heavy. A short drop of rattan honey reported in south central Texas. Extracting is in full force in south Texas, but little honey reported sold. Few sales light huajilla in small pails, extracted, 13c; bulk comb, 17c per lb. Beeswax has moved at 30-37c per lb. One car light amber in 60s sold 6½c per lb.; ton lots, 6½-9c per lb.

PLAINS AREA—Conditions continue spotted. Bees taken from cellars have experienced severe dwindling and 25 per cent of the colonies in some sections are reported dead or queenless. Sweet clover is reported in better condition than white clover. No extracted honey reported sold. Few cases No. 1 white clover comb moved at $4.00 per case. Beeswax has sold at 38-40c per lb.

EAST CENTRAL AND NORTH CENTRAL STATES—Beekeepers have finished unpacking outdoor-wintered bees, except in the extreme north. Losses, including spring dwindling, run very high, often 25 to 75 per cent. Many cellar-wintered bees have lost 30 to 50 per cent. Remaining colonies are often weak, and are being built up by package bees from the South. Even so, it is doubtful if they will be strong enough to secure full benefit from the clovers. Interest in honey is said to be improving. Off-grade honey has largely been sold out or spoiled, and beekeepers look for better prices for good honey. Much white clover and some buckwheat honey, however, still remain in the hands of the larger producers. A few ton lots of white clover have moved at 9c per lb.; 60s, 8½-12c; small pails, 17c per lb.; No. 1 white clover has sold at $4.00 per case. Yellow beeswax quoted at 40c per lb.

NORTHEASTERN STATES—The season is fully two weeks late, and in some sections three to four weeks. Much feeding reported necessary. Prospects good for crops from fruit bloom and clover where colonies have been built up sufficiently. Little honey has been sold lately. Supplies of buckwheat continue large, but little clover remains unsold. Recent sales of white clover extracted reported at 10-12c per lb. for 60s; 14c per lb. in pails; light amber clover, ton lots, 9-11c; buckwheat, 60s, 5-8c per lb.; small pails, 10c per lb. No. 1 white clover has sold at $4.00-4.50 per case. Beeswax quoted at 38-40c per lb.

SOUTHEASTERN STATES—A very unusual spring reported in Louisiana. Nectar supply has been abundant, but due to so much rain bees have not generally been able to gather much. In consequence hives have been congested and there has been much swarming. In a few sections where weather has permitted, however, bees have gathered netcar freely from clover and other plants, and are fast capping combs. The season in Alabama is said to be four weeks late, but white clover is yielding now, and some colonies are storing actively. Demand for package bees is said to be the heaviest since the war. In spite of the late, cold spring, bees in Georgia are doing well on poplar, black gum, and tupelo. Rain is needed for gallberry which may blight otherwise In south Georgia gallberry is blooming and a normal crop is expected. Extracting is in progress. In south Florida there has been too much rain for the bees to work much on the abundant bloom of palmetto and gallberry.

From Producers' Associations

There has not been much activity in the domestic or export markets for the last month. The export and western Canada markets have been exceptionally quiet. We certainly have our marketing problems this season, and, from reports, the problem is world-wide this year. There is more need for greater distribution than for increase in production.

The Ontario Honey Producers' Co-op., Ltd.,
A. G. Halstead, General Manager.
Toronto, Can., May 6.

The season is late in Texas, owing to continued rains. Early flows have been a disappointment, but prospects are good for summer flows from horsemint and mesquite. There has been unusually heavy swarming on account of long drawn-out spring weather and abundance of pollen. The demand for extracted honey is very light, but new-crop bulk comb honey finds a ready market at 16c a lb, at wholesale.

Texas Honey Producers' Association,
E. G. LeStourgeon, Manager.
San Antonio, Texas, May 15.

Special Foreign Quotations

LIVERPOOL—Since our last report we have to report a steady market on honey, although the sales have been small, at about 12½-13c per lb. in American currency. Beeswax has maintained the position we last mentioned and prices have indeed advanced slightly. We quote in American currency at 47-48c per lb. Taylor & Co.

Liverpool, Eng., May. 4.

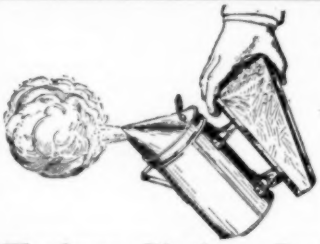
Report of Honey Producers

Early in May we sent the following questions to actual honey producers:

1. At what price has honey been sold, if any, in large lots (specify if this was in carload or less than carload lots) in your locality during the past month? (a) Extracted honey, per lb.? (b) Comb honey, fancy and No. 1, per case?
2. What are prices when sold to grocers in case lots? (a) Extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. jails? (b) Comb honey, fancy and No. 1, per case?
3. What is the retail price to consumers in your locality? (a) Extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) Comb honey, fancy and No. 1, per section?
4. How is honey now moving on the market in your locality? Give answer in one word as rapid, fair, or slow.
5. How does the number of colonies in your locality that are in condition to store surplus honey this season compare with the number of such colonies last year? Give answer in per cent.
6. What is your estimate of the condition of the colonies at this time as compared with normal? Give answer in per cent.
7. What is your estimate of the condition of the honey plants at this time as compared with normal? Give answer in per cent.
8. How does the early honey flow (if any) thus far compare with normal? Give answer in per cent.

The following answers were received:

State.	Reported by:	Large lots. Ext.	Large lots. Comb.	Wholesale. Ext.	Wholesale. Comb.	Retail. Ext.	Retail. Comb.	Movement.	No. Col.	Col. Con.	Plant Con.	Early Flow.
Ala.	W. D. Achord								100	100	100	100
Ala.	J. M. Cutts								150	150	100	100
Ala.	J. C. Dickman			$.90	$.22	$1.10	$.30	Fair	80	80	80	60
Ark.	Jas. Johnson						.25		50	50	50	
Ark.	J. V. Ormond							Slow	100	100	100	150
Cal.	L. L. Andrews	$.08½		.10		1.00	.25	Slow	75	100	75	75
Cal.	M. A. Saylor	.08½	4.00	.80	5.00	1.00	.30	Fair	100	100	100	100
Col.	B. W. Hopper	.10	3.50	.65	3.50	.75	.20	Fair	100	100	100	100
Col.	J. A. Green			.65		.90	.20	Fair	125	100	100	125
Conn.	Allen Latham			1.00	6.75	1.25	.38	Slow	50	50	100	
Conn.	A. W. Yates			1.00	7.50	1.30	.40	Slow	25	25	100	10
Fla.	C. C. Cook			.85		1.10		Fair	150	110	110	110
Fla.	Harry Hewitt			.90		1.13		Rapid	100	100	100	150
Ga.	J. J. Wilder								100	100	100	85
Ill.	C. F. Bender				6.00		.30	Fair		75	90	80
Ill.	A. L. Kildow								85	90	50	50
Mass	B. N. Gates							Fair	45	45		
Ind.	Jay Smith					1.25	.35	Fair	75	50	100	100
Ind.	T. C. Johnson			.90	4.80	1.15	.28	Slow	75	100	100	
Ind	E. S. Miller			1.00	4.80	1.25	.25	Slow	75	90	90	
Ia.	E. G. Brown			.75		1.00		Rapid	80	90	75	
Ia.	F. Coverdale							Slow	50	75	90	
Kan.	Frank Hill	.10	4.25	.75		1.00	.25	Slow	105	105	100	125
Kan.	J. A. Nininger			.75	4.00	1.00	.25	Fair	75	80	90	
La.	E. C. Davis	.08		.75		1.00		Fair	100	100	100	50
Me.	O. B. Griffin			1.13	6.25	1.50	.35	Slow	45	40	95	
Md.	S. G. Crocker, Jr.			1.25	6.00	1.50	.35	Slow	100	100	75	90
Mich.	L. S. Griggs	.09		.70		.92	.30	Fair	30	40	15	
Mich.	Floyd Markham					1.00		Fair	60	85	80	100
Mich.	I. D. Bartlett			.75		1.00		Slow	100	100	90	50
Minn.	Francis Jager					1.10	.25	Slow	80	100	75	75
Mo.	J. H. Fisheck								50	50	100	100
Mo.	J. M. Romberger	.08	5.00	.80	5.50	1.00	.28	Slow	90	90	80	75
Neb.	J. H. Wagner			.65		1.00		Slow	65	100	100	100
Nev.	E. G. Norton			.45		.50				100	100	
N.Y.	Geo. B. Howe					1.00	.28	Fair		75	100	
N.Y	F. W. Lesser					1.00	.25	Slow	90	75	100	
N.C.	C. L. Sams			1.00	5.00	1.25	.30	Fair	110	100	105	105
N.C.	W. J. Martin			1.00		1.25		Fair	80	90	90	90
N.C.	C. S. Baumgarner			1.00		1.35	.30	Fair	100	110	125	125
Ohio.	R. D. Hiatt			1.05	6.00	1.35	.35	Slow	100	95	95	100
Ohio.	J. F. Moore	.10		.85	4.50	1.10	.30	Slow	50	90	90	
Okla	Jos. Heueisen			1.00		1.35	.35	Fair	80	70	75	
Okla	C. F. Stiles			.90		1.15	.32	Slow	80	70	70	
Ore.	H. A. Scullen			.75		.95	.25	Slow	100	100	100	110
Pa.	D. C. Gilham			1.05	6.70	1.40	.38	Fair	85	90	90	100
Pa.	Harry Beaver			.60	2.50	.75	.14	Slow	90	100	80	
S.C.	E. S. Prevost			.75		1.13	.28	Fair	80	80	100	100
S.D.	L. A. Syverud			.70	4.80	.93	.25	Slow	95	90	80	
Tenn.	J. M. Buchanan								50	75	50	75
Tex	H. B. Parks			.75		.90		Slow	60	50	100	
Tex.	J. N. Mayes								100	90	80	50
Utah	M. A. Gill							Slow	120	80	90	75
Vt.	J. E. Crane			1.00	6.00	1.25	.35	Fair	80	75	100	
Va.	T. C. Asher			1.00	6.00	1.25	.33	Fair	100	95	90	95
Va.	L. N. Gravely					1.00	.25	Fair	80	95	70	90
Wash.	W. L. Cox							Fair	110	100	105	115
Wash.	G. W. B. Saxton			.65		.75		Slow	100	110	100	110
W.Va.	T. K. Massie			1.10	4.50	1.25	.30	Slow	100	100	100	
Wis.	N. E. France			.80	4.75	1.00	.25	Slow	50	60	100	
Wis.	E. Hassinger			.80		1.00		Fair	90	100	95	
Wis.	H. F. Wilson				4.75	1.03	.33	Fair	70	80	100	



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GLEANINGS IN BEE CULTURE

JUNE, 1926

OUR CORNERSTONE

REMEMBER at all times that improved bee culture is our end and aim, and we trust no one will hesitate to give any facts from experience because they may tend to overthrow any particular person or "hobby." If any of our special plans don't work, or if anything we advertise has had its value over estimated, here in these pages is the place of all others to set the error right.—From A. I. Root's "introductory" in the first issue of Gleanings in Bee Culture, January 1, 1873.

THE propaganda against honey in the attempt to connect this delicious and wholesome food product with the brood diseases is apparently going ahead full speed in some places. Just what is the purpose of this movement is beyond understanding. It would be difficult to imagine producers of any other food product attempting to destroy their own market, and why any beekeeper or group of beekeepers should do this is beyond comprehension. Just where it will lead to no one can tell. The April issue of the "Food Brokers' Journal," in analyzing the present inactivity of the honey market, gives as the most important reason the recent agitation for certified honey. The industry has thus received a blow from within its own ranks that promises to be a serious setback and one that will be felt for some time. It is certainly unfortunate that the public should be given erroneous ideas about one of the cleanest and most wholesome of foods. How much better it would be if the activity that has been directed against honey could have been put forth in extolling its virtues!

The Depressed Honey Market

ON account of a large amount of honey carried over from last season and good prospects for a crop this season in many important producing regions, together with several factors working against the sale of honey in this country, the greatest campaign for selling honey that this country has ever had should be launched this season.

Solving a Vital Problem

Last year several states produced bumper crops of honey but were without facilities for properly grading, assembling, and shipping out the surplus, while many other states had a crop failure and could easily have absorbed the surplus from the states having bumper crops if the honey could have been properly distributed. In many of the states having a failure last season, smaller beekeepers, who normally dispose of several thousand pounds in their immediate neighborhoods every year, failed to supply their customers when their own crop failed, thus shutting off an outlet for honey which in the aggregate would run into staggering figures. It is to be hoped that some plan will be devised this season which will induce the 800,000 or more beekeepers in the United States to do their best toward selling the nation's honey crop at good profitable prices. By contributing articles to local papers on some popular phases of beekeeping, but always emphasizing honey as a food, by advertisements in local papers, and by speaking a good word for honey at every opportunity, much can be done to create a better demand for this wholesome food. If to this effort can be added some good-will advertising by the American Honey Producers' League, which already has $5000 pledged for this purpose, the tide may be turned the other way and honey moved on the market as it deserves.

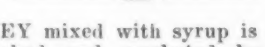
THE unusual demand for package bees this season, together with the unfavorable weather conditions in the South, making the production of bees and queens in large quantities extremely difficult, has brought about much confusion and dissatisfaction in the package-bee business. In many cases orders were booked with the understanding that the bees would be shipped on a certain date, the breeder basing his ability to ship on the date specified upon normal weather conditions; but cold weather prevented the production of the bees on time, thus causing great disappointment to both breeders and purchasers. This situation is extremely unfortunate. The lack of ability to ship bees and queens promptly will shake the very foundation of the

Confusion in Package-Bee Business

package-bee business which has been built up so rapidly during recent years, and the non-delivery or delivery too late will cause great losses to beekeepers whose plans for the season were based upon prompt delivery of package bees.

This general confusion in the package-bee industry reveals several weaknesses which must be in some way overcome if the industry is to be developed to the extent that now seems possible. One of the first things needed is a better understanding between breeders and purchasers. Breeders should understand that, if the packages are not shipped at about the time agreed upon, the purchaser will in most cases lose heavily in the amount of surplus honey secured or perhaps lose the entire crop, since the main honey flow in the North is often quite short. Purchasers should understand that the breeders are not able to control weather conditions and that they may not be able to produce the bees at the time specified. In any case, when orders are booked for a certain date it should be understood that delivery on that date can not be guaranteed under abnormal weather conditions such as prevailed in the South this season.

Another weakness in the package industry is that many breeders are not equipped to take care of the work in the apiaries and the office work at the same time. This is a matter that will no doubt be corrected gradually, but on account of the newness of the business and its rapid growth many breeders are trying to do the yard work during the day and the office work in the evening. As long as the business is small this may work out all right until a great flood of letters is received, complaining about orders not being filled promptly, just at the time the breeder is overwhelmed with work in the apiaries. The shipping season is so short that the building up of proper office facilities to care for a large volume of correspondence is difficult. This is one of the reasons for expecting that in the future the package-bee business will gradually drift into the hands of a few larger concerns having adequate office facilities, or that sales agencies will be established to take care of the selling end of the business of a large number of breeders, thus making it possible to have proper office facilities.



Honey-Syrup Mixture

HONEY mixed with syrup is now being packed and marketed by several firms in this country. In some cases honey is mixed with syrup made of ordinary sugar, while in other cases it is mixed with corn syrup. The Pure Food Law makes it necessary that such mixtures be labeled as such when the product is shipped in interstate commerce, and most of the states have similar laws making it necessary to correctly label such mixtures when sold within the state.

Since syrup is sold in such large quantities, many beekeepers look upon this as a new outlet for honey, believing that the advertising and marketing of syrup containing honey means the disposition of just that much more honey than would otherwise be sold, and also that the advertising of a honey-syrup mixture will tend to help the sales of pure honey.

However, the other side of the question does not look so favorable. Packers of these mixtures put in a little honey in order to sell the syrup, not in order to sell the honey, since the honey is the more expensive ingredient. In other words, packers of such mixtures realize the advertising value of the word "honey" on the label, and also realize the advantage in the improvement of flavor when honey is added. They are appropriating the best talking points for honey in order to sell their syrup, and will use only enough honey to "get by." Therefore, the sale of honey-syrup mixtures can not be built up without making inroads into the sales of pure honey.

If the syrup were the more expensive ingredient and it were found advisable to mix syrup with honey in order to improve its flavor or provide a better sales argument, this would be quite a different matter; but since honey is mixed with the syrup in order to sell the syrup on the fair reputation of honey the development of such a trade can only be detrimental to the honey industry. The labels on the packages of such mixtures plainly indicate the packers' intention since the word "honey" is put in large type so that it stands out prominently, while the explanation that corn syrup or sugar syrup is mixed with it is put in small type. It is a clear case of underselling pure honey with a cheaper mixture, but selling the product on the reputation of honey. Otherwise it would be just as reasonable to expect the packers to put the words "corn syrup" or "cane sugar syrup" in large letters and explain in small letters that honey has been added.

Since the Pure Food Law permits the marketing of such mixtures when the various ingredients are declared on the label, the only way to stop serious inroads on the honey market by these mixtures is that of pushing harder the

sale of pure honey. If honey could be advertised as much as it deserves, some of these vile mixtures could be driven from the market. If the housewife prefers to mix honey with "corn syrup" (which is unthinkable), let her do it herself instead of having it done in a packing plant.

"Corn Sugar" Bill Stil Threatens Beekeeping

BEEKEEPERS of the United States are certainly to be congratulated on the manner in which they responded to our appeal to write to their congressmen protesting against the "corn sugar" bill, which threatened the very existence of the industry. As mentioned in the May issue of this journal, this avalanche of letters resulted in the complete abandonment of the original Cole bill, but in abandoning it the "corn sugar" people have sought other pastures where they apparently think beekeepers will not molest them. The new bill as rewritten and reported favorably by the House Committee on Interstate and Foreign Commerce would amend the Pure Food Law with a provision that "Confectionery, frozen products, products of the bakery, meats or meat products shall not be deemed to be misbranded under the provisions of this act for failure to declare the presence of sucrose, dextrose, maltose, or levulose." Since corn sugar is chiefly dextrose, the purpose of this wording is readily seen.

While the bill in its present form would not legalize the adulteration of honey, it would, by legalizing deception in the labeling of other foods, still be injurious to beekeeping by destroying confidence in the truthfulness of labels on all food packages, including honey. The legalizing of so much leeway as to labeling even in a limited class of foods would strengthen the suspicion that labels do not tell the truth. One of the greatest needs of the honey industry is a greater confidence on the part of consumers that they are buying pure honey when they purchase packages so labeled. Anything that tends to destroy confidence in the exact truthfulness of labels on food packages is bound to work a hardship on beekeepers who seek to market their product in its pure form. In fact, this suspicion is one of the greatest problems in the marketing of honey, and beekeepers should remember that the adulteration of honey with "corn syrup" previous to the passage of the Pure Food Law is largely responsible for this suspicion.

The "corn sugar" people have shrewdly chosen for misbranding those groups of food products which the Department has not as yet completely standardized in all cases. It would certainly seem unfortunate to pass a law to tie the hands of the Department in further standardization and thus prevent the full working of the Pure Food Law as originally intended by which the purchaser shall be told exactly what he is buying when purchasing food of any kind. If the Department were permited to go ahead with the classes of food mentioned in this bill, gradually working out standards, then compelling all manufacturers to state the exact ingredients on each package, the public would finally gain confidence in the truthfulness of labels. Until this is done, the spirit of the Pure Food Law will not be put into full force, and to pass a law now making it impossible to do so simply to accommodate a few manufacturers of "corn sugar" seems almost unthinkable.

The bill is now on the House Calendar and Mr. Cole is making a desperate effort to secure a special rule from the Rules Committee to bring it before the House. If this special rule is not obtained the bill may not be reached before Congress adjourns, but it may come up at any time. Even if it is not brought up during this session, it is certain that the powerful influences backing it will immediately make plans for obtaining what they want during the next session. It will require careful and constant watching if beekeepers are not to be defeated in their fight for truthful labeling of food products.

Since the avalanche of letters of protest from beekeepers was sent to Washington, the "corn sugar" people have been busy explaining to senators and representatives that their bill has now been changed so it can not injure beekeeping in any way, and without further protest from beekeepers it may be passed any day. Since the letters of protest previously sent in do not apply to the new bill, every beekeeper and every believer in honest practice in the labeling of food products should again write to their two senators and their congressman, asking them to vote against House Calendar No. 204, S. 481 Report No. 911 (the "corn sugar" bill), if it is brought up during the present session, on the ground that it would legalize fraudulent practice in labeling several groups of important foods, destroy confidence in the truthfulness of labels on all food products, including honey, and benefit only the manufacturers of a product which has a notorious history in food adulteration.

QUEEN-CELL BUILDING

By Jay Smith

Some of the Finer Points in Securing Large, Well-Provisioned Queen-Cells in Large Numbers

To have the ability to build perfect queen-cells means the ability to rear good queens. While there are other points necessary to successful queen-rearing, they are of minor importance and can easily be mastered. There used to be two difficult features in queen-rearing with us. One was to get good cells built, and the other was to get the cell or virgin queen safely installed in the colony or nucleus. Since adopting the practice of feeding in order to get the cell accepted, as described in a previous article, that feature has been marked off the list of difficulties. With those other troublesome problems out of the way, we were free to work on the big feature of queen-rearing — cell-building.

I have had considerable correspondence from beekeepers asking how our experiments came out in cell-building without the use of the swarm-box described in "Queen Rearing Simplified." I will say that we have for several years been using the method here described, and for rearing queens in a large way we consider it superior to the swarm-box. I believe this system will appeal to the honey producer, as it is simple, requires little or no additional equipment, and the best of cells can be reared. As successful beekeeping depends upon the quality of the queen, I strongly advocate that the honey producer rear his own queens as far as is practicable.

Large Cells Are Best

A cell, to produce a worth-while queen, must be large. This is so of necessity, for it requires an abundance of royal jelly to nourish the growing larva, therefore the cell has to be large to hold this food. Also a good queen must be large. It is a physical impossibility for a queen to be small and contain the eggs in the process of development in the large number necessary to fill the hive with brood in a short time. The more prolific a queen, the more young bees she can put in the hive at one time, which is the secret of heavy crops of honey.

I remember a number of years ago a man wrote that a queen did not have to be large to be prolific, and that he had known small queens to be superior. At a certain convention a beekeeper said to me that he had read this statement and he took it for granted that a small queen is superior. He also said that he had discovered a plan to rear superior queens. He would starve the colony that is rearing the queens. This, of course, would produce small cells and these small cells would produce small queens, which he thought would be superior. Josh Billings was right—"What's the use of knowing so much, when so much we know ain't so?" This is false doctrine, and while there may be apparent exceptions to the rule, I believe the less said about it the better. My experience has taught me that the largest cells, that contain the most jelly—yes, skads of it—are the ones that give the best and most uniform queens—queens that have vitality plus—queens that will stand long trips and abuse, and that have long lives.

In my talks at conventions I have often mentioned the fact that if the growing larva has all the food it needs, more would do it no good, and comparison was made to fattening a hog. If a hog has all the corn it can eat, it will put on no more fat if given a ton of corn extra. The same with the queen larva. But how do we know some will not run a little short if we do not see to it that all cells have all the jelly we can possibly induce the bees to place into them?

Solomon, who had the reputation of having a lot of common sense, said, "Go to the ant, thou sluggard, consider her ways and be wise." In our case, however, we are studying bees instead of ants, therefore I like to go to them and consider their ways if I wish to get wise to their manner of doing. If we examine the cells built by a strong colony that is preparing to swarm, do we find small cells skimped with royal jelly? Not on your life. On the contrary, we find a lot of jelly left in the cells after the queen has emerged. So I am willing to take their word for it that a whole lot of royal jelly is necessary if we wish to produce worth-while queens. My experience bears out this feature, and I believe in the doctrine of the more jelly the better.

What Is Royal Jelly?

In the past the belief was held that the larval food commonly called royal jelly was a digested food known as "chyle." Later the question was raised as to whether it might not be a secretion of the glands of the worker bee. I have always held to the latter theory, from experience in feeding bees. It was noticed that, in feeding for cell-building, it is necessary to feed several days in advance in order to get any effect of the

feeding. Sometimes it is necessary to feed four or five days in advance of cell-building when no nectar is coming in. The deduction is that if royal jelly is merely chyme, the bees should be able to prepare this in a few hours. I notice that several scientists have definitely proven that royal jelly is a secretion.

Getting an Abundance of Jelly into the Cells

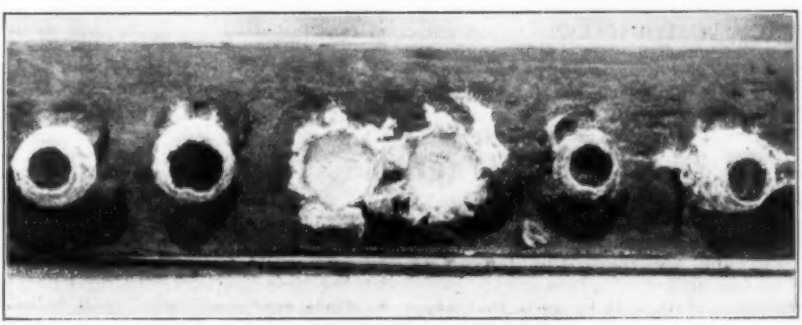
In artificial queen-rearing, how are we to get an abundance of jelly into the cells? In order to do this the larvae must be grafted when exceedingly small. If you will observe the nurse bee as she deposits this jelly in the cell, you will see that the worker keeps its head in the cell for a long time. This would indicate that the secretion is slow. Therefore if older larvae are grafted, the workers will not have sufficient time to deposit the required amount of jelly in the queen-cells before the larvae are mature. The nurse bees begin to store jelly in the cup as soon as the larva comes out of the egg, and in certain cases before. I have many times seen the bottom of the cell covered with jelly completely surrounding the egg. In such cases the bees seemed particular never to allow the jelly actually to touch the egg. From this it can be seen that the bees were anxious to get an early start in storing jelly in the cell in order to be sure there was a super-abundance of food ready for the larva as soon as it had hatched. In artificial queen-rearing it has not been practical to use the egg in the cell, but the nearer we can come to it by using the very smallest larvae the better queens we will produce.

When bees prepare to swarm and build cells there is always plenty of food in the hive and some fresh nectar and pollen coming in from the fields. Unless the nurse bees are being fed lavishly they are unable to secrete this royal jelly in sufficient quantities to produce even a single queen. When they are well fed they can deliver plenty of food to the larvae in a small space of time and then stand aside to give another nurse bee a chance to do likewise. When they are secreting very little it takes each bee so long to deposit what it has that the larva consumes it as fast as it is given and is underfed. And no matter how many bees there are in the colony, if only one cell is present the larva it contains will be underfed, as only one bee can work at a time. If a number of cells were given, each one would receive the same attention as the single one, for there are plenty of bees present to care for them.

Therefore, if we wish to get the jelly into the cells, we must see that the colony is well fed for four or five days before giving them the cells for finishing. If a light honey flow is on, the conditions are ideal for perfect cell-building. If there is no honey flow, feeding must be resorted to. This last year I have been using a Doolittle division-board feeder. These are made wide enough to take the place of two Jumbo frames, and they will hold six quarts of syrup. These are put into the hives four or five days in advance and filled with sugar syrup. I find it best to fill it with thick syrup at first, and later a thinner syrup of about one part of sugar to two of water will do. It will take the bees about two days to take the feed all out of this feeder. A lath is used for a float, so that there is not much room for the bees to get at the syrup; and, as it keeps up a continuous supply day and night, it is very effective.

Preparing the Bees for Cell-Building

For building cells economically and well there must be a large number of bees and they must be well fed. I have never carried on any careful experiments to determine just how many bees it takes to finish a number of cells. But if it takes a certain number to build 100 cells, twice as many will build 200 equally well. As a time-saver, I prefer to build up a colony to great strength by giving



To produce good queens, the cells must be flooded with royal jelly.

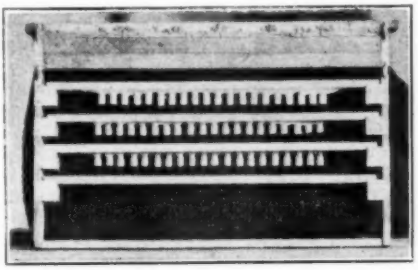
it capped brood from other colonies. About two weeks before grafting I give them six or eight frames, and again eight days before grafting I give them another lot of frames of brood—enough to fill two Jumbo hive-bodies. If all of the brood is given at one time, some of it might die from want of proper nursing. Between the two hive-bodies is a queen-excluder. When ready to graft, the brood in the upper hive will all be sealed if no eggs were present when adding the frames. If no honey flow is on, the feeder has already been put into the hive as described.

Grafting Larvae into Cell-Cups

In the morning we go to the prepared colony, take off the cover and lay it on the ground to the right near the entrance to the hive. Then the upper story containing the feeder is set on the cover cornerwise so as not to crush bees. The bottom hive is then placed on a bottom-board just back of the old stand with the entrance facing in the opposite direction. The hive-body that was on top is now set on the bottom-board on the old stand with the queen-excluder at the bottom of the hive next to the bottom-board. This is to keep out any nosey virgin that might want to adopt this queenless hive. The hive-body containing the queen is now opened and the bees from five frames are shaken into the hive on the old stand. Of course the queen stays with the hive that was moved. Enough bees are left with the queen so that she goes ahead with egg-laying, thereby keeping up the strength of the colony. In half an hour the hive on the old stand is ready to receive the grafted cells. This makes conditions ideal not only for cell-starting, but for building to completion. There are a horde of nurse bees that have been feeding larvae in abundance. They are queenless and all brood is capped. The fielders continue to bring in pollen and nectar, and the colony is all set for feeding queen larvae. The process of grafting has been described many times, so I will not dwell on that subject.

I have experimented with frames and bars for a number of years and am well satisfied with our present outfit. A regular brood-frame is used for holding the cell-bars. Galvanized strips are nailed on the frames to hold the bars. In this way a small edge only comes in contact with the cell-bar, which is not glued fast, and accordingly is easily removed. Notches are cut in the galvanized iron strips to hold the frames so they can be carried around, and there is no danger of the bars falling out of place.

From the cut it will be seen that the upper part of the frame is filled out with wood. Before adopting this feature we found that, when there was a honey flow and the conditions were right for cell-building, the bees built comb on the cells badly when placed near the top. Another drawback was the fact that they bulged the combs into this space. Filling in this space with wood prevents bulging of the combs that come next to the cell-bar. When cell-bars are too near the top of the frame they get covered with comb, and where they are too near the bottom they are not finished so well. We therefore have the three bars as near the center of the frame as possible. They are spaced close together, so little comb is built on them. They are spaced one and three-fourths inches apart, and the top cell-bar is three and one-half inches below the top of the top-bar of the brood-frame.



Frame arranged to hold three cell-bars. Note that the cells are near the middle of the frame, the bars being spaced some distance from the top and bottom.

We use three bars, as a rule, putting in a blank bar in the bottom below the last cell bar to prevent the bees clustering there and building comb on the cells. When the colony is exceptionally strong, this fourth bar may be grafted, but as a rule we leave this blank. Three of these frames, each holding three bars of twenty cells, is given to each cell-building colony. Out of this one hundred and eighty cells grafted we usually get about one hundred and sixty cells built out to completion. Three bars are grafted, then placed in the frame and given to the colony; then another three, and then the third.

The feeder is kept supplied with syrup, and when the cells are capped the brood-chamber containing the queen is again set underneath. When the cells are ripe they are given to nuclei, and this same colony is again used for cell-building. If it becomes weak in bees, more brood is given just as the queen-cells are capped. By the time they are ripe, and it is time to graft again, all brood will be sealed.

Brood is not necessary, nor is it in any

way beneficial in the cell-building hive except to strengthen the colony. When the colony is strong enough, empty combs will give the same results in the cell-building colony. By this method cells will be built large, and after the virgin has emerged plenty of jelly will be left in reserve, showing that the larvae have had an abundance of food.

Vincennes, Ind.

STRONG COLONIES FOR COMB HONEY

By E. S. Miller

A Method for Making Colonies Extra Strong and at the Same Time Eliminating Swarming

In 1919 E. R. Root, in the August and September numbers of Gleanings, wrote concerning Harry Warren, of Reno, Nevada, and his method of manipulating bees in the production of comb honey. Mr. Warren was at that time an extensive producer, and his crops were enormous. With thousands of colonies and a surplus of several hundred pounds per colony, his annual output amounted to many carloads. Some time after this article was published I met Mr. Warren, and he explained in detail his method. I gave considerable thought to his mode of manipulation, and came to the conclusion that it would not work in our locality, owing to the fact that Indiana bees have a propensity for swarming, especially if crowded at the beginning of a honey flow.

Mr. Warren's plan was briefly this: He grouped several hives near together, and at the beginning of the honey flow shook all bees into one of the hives, piling on comb supers to the number of ten or more. Illustrations accompanying Mr. Root's article show twelve or more supers per colony, and he states that a ladder was necessary in reaching the top. The picture looked pretty good, and so did the report, and I asked Mr. Warren a number of questions—in fact, about all the questions I could think of at the time. Among the rest I asked him whether the bees did not fight and kill all the queens when shaken together. His reply was that, in order to prevent fighting, they were wet down with a water sprinkler. He also stated that his bees so treated did not swarm. Now, when a fellow tells me his bees do not swarm it arouses my interest, if not my suspicion. I have had a hunch that if one's bees do not swarm it is because of one of two reasons. It is either because he gets around before they swarm, or they swarm before he gets there—usually the latter.

Various Methods of Swarm Control

Some years ago I studied and put into practice Dr. Miller's method of comb-honey production. Dr. Miller's plan was as follows: Colonies were allowed to swarm, and the swarm was hived on the old stand, while the brood and remaining bees were placed alongside. Then, seven days later, the brood colony was moved to a new location. Comb supers were at once placed on the hive containing the new swarm. Moving the brood hive to a new place depleted the number of workers so that there would be little probability of second swarms, even if queen-cells were not removed, and the returning bees helped to strengthen the new colony on the old stand. This plan works well where one has only a few hives and has the time to watch for swarms; but in the extensive production of comb honey in out-yards it is not practicable.

For a number of years I practiced "shook swarming" of colonies run for comb honey with fair success, but found that, unless they are strong, and unless there is a good flow of nectar, many unfinished sections are apt to result. I also tried rather extensively for several years Mr. Demuth's plan of giving the queen the range of two hive-bodies up until the beginning of the clover flow, and then reducing the brood-chamber to one story, filling it with capped brood and adding comb supers. This plan has not proved satisfactory in my experience for the reason that in nearly every case swarming results. Swarms occur both before and after reducing the brood-chamber, unless carefully watched and means are taken to prevent it, and the labor of manipulation is considerable. Many other schemes have been tried with greater or less success. Sometimes a plan will work well one year and the next year it will not prove satisfactory.

Shaking Several Colonies Together

By combining the best features of several methods, I believe that I have arrived at a better scheme for the production of comb honey. In the first place, colonies should be built up strong with an abundant supply of food through the spring months, preferably by adding a super of honey as a food-chamber at least a month before the opening of the main flow. Next, group two or three or more

hives, the number depending on colony strength. At the beginning of the main or clover flow replace the center hive in the group with a hive containing full sheets of foundation. Below the hive-body of foundation place an empty super; that is, one without frames. The purpose is to give the bees room to form a cluster which will be suspended from the bottom-bars of the hive instead of from the foundation. Bees separated by the sheets of foundation are more apt to abscond, and in warm weather a heavy weight of bees may stretch or tear the sheets loose. Above the brood-chamber place a queen-excluder and as many comb supers as may seem necessary, but no more than will likely be covered by the bees. Now, with the new hive prepared, shake in front of it the bees from all colonies in the group and let them run in together. If it is desired to save any of the extra queens, they may be caged and used elsewhere. One important point to be observed is that, before shaking, every colony must be thoroughly smoked and the hive drummed until the bees fill themselves with honey, and this honey will be used by them in drawing out the foundation. In two or three days remove the super beneath to prevent the building of combs below the bottom-bars, and, if necessary, add more supers above. In shaking several colonies together in this manner I have never known the bees to fight or to kill the queens. If there is more than one queen they will settle their differences in duelistic combat. If other queens are taken away, even a strange queen may be introduced at this time, letting her run in with the bees, and it is not at all necessary to wet them down as suggested by Mr. Warren.

Disposition of the Brood

In the operation of shaking a few bees should be left with the brood to care for the unsealed larvae—say about the equivalent of those adhering to one comb; but if the weather is cool, more may be necessary. The hives of brood may now be moved to a new location and, if no increase is desired, two or more brood-chambers may be united. All queen-cells should be destroyed at this time and the hive entrance contracted. After the brood is sealed, queen-cells should again be removed and a ripe cell given from the best stock available, or the colony otherwise requeened. An important reason for removing these cells is that, if reared under conditions where there are only a few flying bees, the larvae would not be properly fed and would not result in good queens.

Colonies made by shaking several together in the manner described ordinarily will produce a considerably larger amount of comb honey than will the same bees distributed through several hives and, unless too many are given, the sections will be better filled. This is probably due to the fact that there is less brood to feed in proportion to the number of workers. The brood colonies with the young queens will build up strong for the fall flow and for winter. If it is desired to cut down the number of colonies, the comb honey hives may be dequeened and united with the others after the clover flow is over, using the newspaper plan. In some years, however, we find colonies so strong that it is not practicable to unite them, and much swarming is apt to occur in August and September unless some means is taken to prevent it. In such cases we replace the brood with drawn combs and use it to strengthen weaker colonies or to form new ones.

Diseased Colonies Treated in Same Operation

In case American foul brood is prevalent, the procedure here outlined is in conformity with the orthodox method of treatment. One can treat the disease and secure the maximum crop of honey at the same time. Of course, the diseased brood must be taken care of. If badly infected, it should be burned or buried. If only a few cells appear, the hives may be taken to a hospital yard or, at least, removed some considerable distance from healthy colonies and two or more of them united. Ten days after shaking give a queen-cell and in another ten or twelve days, when the brood is practically all out and the new queen is just beginning to lay, shake again. The combs can then be sterilized or melted up for wax.

The advantages of this method may be summed up as follows: It can be used in out-yards, as it practically eliminates swarming. It requires a minimum amount of labor as compared with results. It gives the maximum amount of surplus comb honey, results in better filled sections, enables one to requeen with best stock at the right time of year, treats American foul brood in the same operation, and leaves bees in the best condition for a fall flow or for winter.

Valparaiso, Ind.

[In Mr. Miller's location, conditions are usually quite favorable for swarming at the beginning of or early in the clover honey flow. This is especially true with cellar-wintered colonies, which usually reach swarming conditions about the time clover begins to yield freely. In localities where this condition is reached previous to the main honey flow there is less trouble from swarming, especially if the honey flow is heavy and the weather favorable.—Editor.]

BEES AT CHAUTAUQUA AUDIENCES

By E. R. Root

Publicity for Honey by Means of Startling Demonstrations with Live Bees

(Continued from May issue.)

After having finished the lecture proper, I take off my coat, roll up my sleeves and then turn to the children on the platform and ask, "Are you ready?" This keys up the youngsters as well as the audience. I light my smoker, an act that is always interesting, and blow a few puffs of smoke over my box of bees. This, of course, sets up a roar, and to open the box *then* would result only in many of them flying up into the air—something I wish to avoid. Knowing that the bees will quiet down anyway, I ask my bee fairy to come up and wave her wand over the box of bees, explaining that I hope this will quiet the bees. (Of course, the bees would become quiet, wand or no wand, but the audience doesn't know this.) While the bees are still roaring, I walk with the box back and forth in the aisles of the audience, returning to the stage. The bees are now quiet. I open the box and very gently lift out a frame of bees. If I find the queen on the first frame, I put that back in the box, with the queen, and remove the other frame, for reasons that will be explained later. I spread out a newspaper on the platform and shake the frame of bees, minus the queen, onto the newspaper. I gather up the four corners of the paper between the thumb and fingers of each hand and give it a violent shake downward. This forces the bees all down into the groove or fold of the paper. I pick up my hat and give the paper another shake, in such a way that all of the bees will fall en masse from the fold of the paper into my hat. I shake the hat and then set it down upon a stand in front of the boys and girls, and ask my bee fairy to wave her wand over the hatful of bees so as to make them be good. (They would be good any way.)

I now take out the other frame of bees and the queen, walk down the aisles through the audience, pointing out the bees and the queen. While I am walking I tell how many eggs the queen will lay in a day; how those eggs hatch in three days; how the young bees feed the larvae, etc.; and after I have been down all of the aisles I return to the platform and put

Wearing a hatful of bees never fails to thrill the spectators.

the frame of bees with the queen back into my nucleus box. I then turn to the children and tell them to keep guard on the bees in the hat, explaining that it is very important that they let no one play with the bees in the hat while I am gone.

I now take the box of bees with the queen and set it on a table outside of the tent, but inside of the canvas enclosure, pull the cork out of the entrance, and then come back on to the platform. I tell the little bee fairy to wave her wand over the hatful of bees, more to excite the curiosity of the audience and to see what effect this has, if any. I may or may not blow a little smoke into the hatful of bees. It all depends on how "good" they are. I then proceed to shake the bees in the hat, like corn in a corn-popper, explaining that the bees are so good that I want to "hare them up a little." The very act of shaking, which I do not explain to the audience at the time, demoralizes and quiets the bees. I now reach down very gently and pick up a handful of bees.

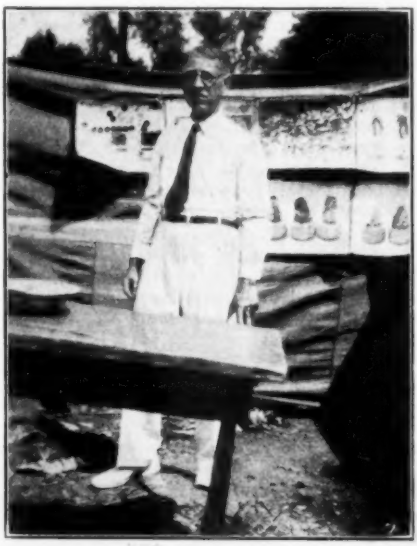
I should explain that this is a real "trick of the trade." The average beekeeper would get badly stung in doing this act. The whole trick is moving the fingers very gently under the mass of bees, being exceedingly careful not to pinch or crowd them too fast.

After I have a good handful, I hold it up to the audience and before the children. I tell the children to rise from their seats and hold out their bare hands, and that I am going to put a dozen or so of bees in the hands of each child. Again there are expressions of "oh! oh! oh!" and the whole audience is in a ripple of expectancy. I tell the children that not one of them will get stung. Into the hand of each child I shake a dozen or so of bees. Then I turn to them and ask them if they have been stung, and of course they say, "No." At this the children are usually roundly applauded. Next I show the children how they can invert the hand and with one quick jerk shake the bees all back into the hat. I now ask the children to go out where my box of bees is outside of the tent and to stand guard around that box.

At this stage of the proceedings the inside and outside of the hat is covered with live bees. I gently let it down upon my head, while on the platform, being careful not to pinch any bees, and to crowd the bees out of the way between the hat-brim and my head. This is another real "trick of the trade." With the hatful of bees on my head I now walk back and forth in the aisles through the audience, explaining how bees swarm and how they can be hived, finally stopping in front of my box of bees. I now request the audience to come outside, because I am going to send a swarm of bees up into the air.

The Swarm in the Air

I form a circle around me, about forty feet in diameter, of from one to two thousand people, all of whom are eager to see what I am going to do. I approach some balded-headed men and ask them what sizes of hat they wear, but never put my hatful of bees upon their heads, because I don't want to take the risk of a single person getting stung. I do this to "bluff" the aforesaid gentlemen into thinking that they are going to wear my hatful of bees. This usually brings out a roar of laughter at their expense.



Waiting for the "swarm" to return after throwing a wash basin full of bees into the air.

I next come back to where the box of bees is, shake the bees from my hat into a wash basin or a tin pan, because the bees can't cling to it. I now throw the bees up into the air with one quick throw, just as I would throw a pan of water up into the air. The bees immediately take wing. To the audience this is an enormous swarm, and the bees roar just as they would in a swarm; but of course there will be no more than about five thousand bees, though enough to give the effect of a swarm. When I see the bees getting ready to go back, as they will invariably do, to the box where the queen is, I tell my little fairy to wave her magic wand at the bees, and then I tell her to point the wand toward

the hive. In a very short time the bees will proceed to go back to the box. Of course, they would go back anyway, wand or no wand. Later on I explain that the wand had nothing to do in quieting or calling back the bees. But the wand and the little fairy serve a very useful purpose in fooling the audience for the time being, getting it in a state of mind where it will listen to any sober facts or series of facts that I can present to them.

After the bees are back in the box, I ask the audience to return to the tent, when I explain how to use honey as a food; how to use it in cooking, distributing to the housewives honey leaflets that explain all of this, thus closing my talk.

On a challenge I once handled a nest of bumblebees that "naughty boys" had been teasing all the forenoon. This nest was just back of the tent. At the close of my general demonstration with honeybees I asked my audience to come back where the bumblebees were, but to keep "at a respectable distance." Bare-handed and bare-headed, I pulled the bumblebees' nest to pieces, took out the brood and the honey, picked up the bumblebees one by one, without a sting. All I did was to use smoke—just enough of it to make the bees in the nest buzz. The same procedure will work with yellow-jackets and hornets.

I expect to do these "stunts" for eighteen consecutive weeks, every day, beginning the middle of April and closing about the first week in September; and if the beekeepers will see that the cities and towns in which I speak are supplied with *good* honey I will help them clean it up.

PENETRATION BY DISINFECTANTS

By R. P. Needham

Comparison of Alcohol-Formalin with Water-Formalin in Manner of Entering Cells

During the past year some work has been done under the direction of Dr. E. F. Phillips in a study of the brood and honey cell-cappings to determine their relative porocity in its probable relation to the penetrability of a disinfecting solution. In connection with this study, observations were made on the behavior of disinfecting solutions within the cells.

First, the cappings should be considered, to determine what holes are present and what obstacles or aids are presented to a disinfectant in entering the capped cell. A number of cappings were removed and examined to determine their structure, the number of holes present, and the width of the largest hole in each type of capping. Since the penetrability of a liquid doubtless depends on the width of the aperature rather than on its length, only widths are recorded. By passing light through the capping, holes show distinctly.

Structure of Cappings Over Cells of Brood

The average number of holes visible under the microscope in cappings of cells containing healthy brood (Fig. 1) was 13.09, only those places where a distinct beam of light came through the capping being counted as holes. The width of the largest hole in any normal capping was .308 mm., and the average width of visible holes was .117 mm. A few cappings had no visible holes. On the inside of the perforations, lying between the outer and inner surfaces of the hole, a fine network of silk stretches across the aperature at different levels. Dry silk strongly repells liquids, and these strands of silk undoubtedly retard or prevent the entrance of a liquid into the cell. The entrance of a liquid into a cell depends on the number and width of the holes, the amount of silk covering them, and the surface tension of the liquid.

Cappings cut from cells containing diseased brood present a different appearance. Since *Bacillus larvae* attacks the brood after sealing, the cappings over diseased larvae in the earlier stages of the disease do not present any appearance different from cappings over healthy brood. The usual small holes may or may not be present, but at first the capping has the full, well-rounded form of the normal capping. After the infected larvae has rotted down within the cell, the capping becomes sunken and black. The bees gnaw holes in it and after a time several holes or one large hole may be visible (Fig. 2). After the larva has dried to a scale the entire capping and even parts of the side walls may be gnawed away by the bees. A capping cut from a cell in which the larva has about dried down to a scale shows a few holes of medium size (Fig. 3). Silk in the capping may cover the smaller of these holes by a sparse network until it is torn away by the bees. A disinfectant can easily enter holes in cappings over old dried-down scales, due to the larger

size of the holes and to absence of silk to prevent the entering of the fluid.

There is a possibility that the remains of the dead larva during the "ropy" stage, may be thrown against the inside of the capping while extracting the honey from combs containing such material previous to disinfection, and this might completely prevent the entrance of a

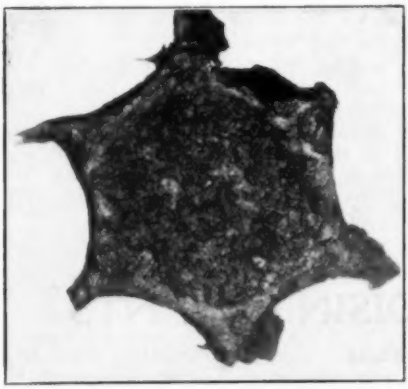


Fig. 1.—Capping from healthy cell.

disinfectant into a cell. If this were to occur, and the scale dried hard in this position, sterilization of the cell's contents might be prevented.

Structure of Cappings Over Cells of Honey

Honey cappings show no holes when examined under the microscope and this makes it necessary that all such cappings be removed and the honey extracted previous to disinfection by liquids.

There should be considered the action of disinfectants in open cells. Several open worker cells were cut from a piece of brood comb and fastened horizontally to the end of glass rods. Tall jars containing alcohol-formalin solution, water-formalin solution, and soap solution to be followed by the water-formalin solution were used, and the cells were immersed slowly, comparable to conditions when the solutions flow into the combs in a disinfecting tank. The formation of bubbles within the cells was then observed by passing a strong light through the thin wax of the cell wall, showing the air captured in the cell as a shining, silvery bubble. In the alcohol-formalin solution the bottom of the bubble never comes in contact with the lower cell wall (Diagrams A, B, C), where the scales formed by the dried-down diseased larvae always rest, consequently when using this solution the scales in open cells are always in contact with the solution.

How Different Solutions Enter the Cells

The water-formalin solution when used after immersion in the soap solution, captures a bubble much like that of the alcohol-formalin solution (Diagram F). Occasionally the lower edge of this bubble comes in contact with the lower cell wall. In this case the scale is in contact with the disinfectant, either partially or wholly, depending on the shape and size of the air bubble captured within the cell.

The bubble captured by water-formalin solution used without previous immersion in the soap solution shows the greatest variation in size and position (Diagrams D, E). A large bubble is usually captured in the cell, in most cases connected with both upper and lower cell walls, not forming a definite, well-rounded bubble. Occasionally it assumes the shape of bubbles captured in the cells when using

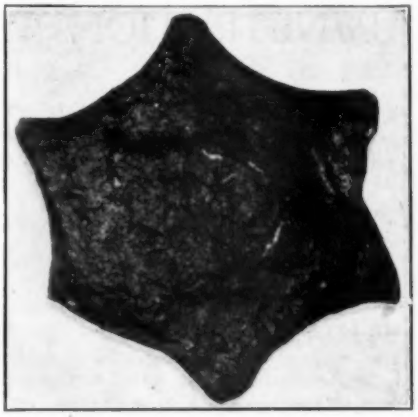


Fig. 2.—Capping from cell containing diseased material.

the other solutions. In this case the outer end of the scale comes in contact with the water-formalin solution, but, due to the large amount of air usually captured, the shape and size of the bubble are sufficient to prevent the inner end of the scale from coming in contact with the solution.

How Different Solutions Penetrate Cappings

Individual sealed diseased brood-cells containing dried-down scales were immersed in the alcohol-formalin solution and the water-formalin solution for 48 hours. Three types of cells were selected: completely sealed cells, those in which the holes were small, and those in which the holes were large. After immersion for 48 hours, completely sealed cells are dry inside with the exception

of a slight amount of moisture seeping through the minute holes in the cappings for both the alcohol-formalin and the water-formalin solutions. With cells having small holes in the cappings the scale is moist in the case of the alcohol-formalin solution, while in the water-formalin solution merely the tip of the scale is moist. With a cell containing rather large holes in the capping, the cell was almost completely filled with air which formed a large bubble, practically the same in each solution, and with the scale thoroughly wet in both cases. The specific form and size of the bubbles in these cells could not be observed, due to the failure of light to pass through the thick walls of the old brood cells used,

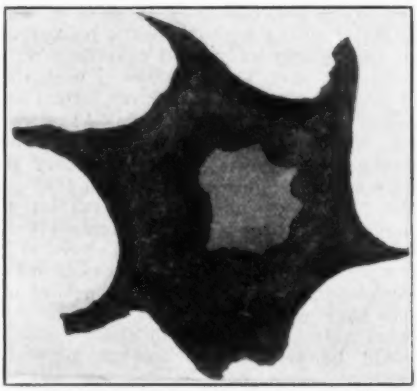


Fig. 3.—Capping from cell containing diseased material which has been partially gnawed away by the bees.

and it was necessary to remove them from the solutions and to cut them open to observe the amount of fluid that had penetrated the cells and to determine whether or not the scale was wet.

It is evident from a study of air captured in sealed and unsealed cells that American foul brood scales are not always in contact with disinfectants. Few recurrences have been reported after using the alcohol-formalin solution, and if the scales are not always in contact with the fluid sterilization must occur from some other reason. It is probably due to the air in the bubble absorbing sufficient formalin gas to serve as a disinfectant.

These observations show the different entering powers of the fluids used. The alcohol-formalin solution enters best, due, no doubt, to its low surface tension

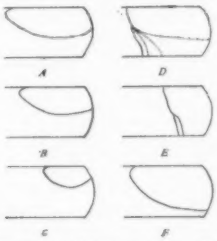


Fig. 4.—Diagram showing the form of bubbles captured in unsealed cells by American foul brood disinfectants: A, B, C, bubbles captured by the alcohol-formalin solution; D, E, bubbles captured by the water-formalin solution; F, bubble captured by the water-formalin solution after previous immersion in soap solution.

and low specific gravity. The water-formalin solution, when soap is used first as a spreader to facilitate its entrance, enters almost as well as the alcohol-formalin solution. The water-formalin solution used alone lacks penetrability. If the entering ability of a fluid is indicative of its disinfecting ability, then the alcohol-formalin solution is best for this purpose.

From the examination of brood-cell cappings, and from the observation of bubbles captured in open and sealed cells, it seems desirable to uncap all brood cells as well as honey cells previous to disinfection by any liquid. The few recurrences of American foul brood reported after large scale use may have been due to such cell-capping peculiarities as are noted.

Cornell University, Ithaca, N. Y.

FROM THE FIELD OF EXPERIENCE

CO-OPERATION AMONG BEEKEEPERS

Significance of Response of Beekeepers in Opposition to the "Corn Sugar" Bill

The criticism is sometimes made that beekeepers of the United States fail to co-operate, and this is stated so often that after a while one comes rather to believe it. Something has recently happened which at least casts doubt on the validity of this accusation, so it may be worth while to look over the record briefly to see whether there is any basis for the criticism, or to see why some people accuse us of this.

During the "good old days" of the National Beekeepers' Association, although beekeeping was far less extensive and important than at present, large meetings of beekeepers were held almost annually. It happened at times that a poor choice was made of a place of meeting and the attendance was small, but when a central meeting-place was selected and when a good program was announced well in advance, beekeepers turned out by the hundreds and everybody had a profitable time. None of us who were there will, for example, ever forget the meeting at Detroit which W. Z. Hutchinson planned and managed so successfully.

The meeting held at the University of Wisconsin at the time of the dedication of the Miller Memorial Library was one of the most remarkable gatherings of beekeepers ever held in this country, beekeepers coming from all over the country to attend it. They came to unite in paying honor to the memory of a beloved beekeeper and also to take part in the best meeting so far held.

When Mr. C. P. Dadant announced after the war that subscriptions would be received for the relief of beekeepers of France and Belgium, none of whom had ever been seen by their American co-workers, the subscriptions sent in were not large but they were given freely and the amount collected was doubtless a help.

When the committee headed by Mr. Dadant, and of which I had the honor to be a member, asked for subscriptions for the endowment of the Miller Memorial Library, responses were rather liberal, and hundreds of beekeepers who had never seen Doctor Miller and who will probably never see the library, sent in contributions large and small.

When the bill for the prohibition of the importation of adult bees was presented to the Congress, there was some opposition to it, beyond question instigated by an honest difference of opinion on this subject. When the rank and file of beekeepers learned that this bill was in some danger, they flooded Congress with demands that it be passed, outnumbering those in opposition by a hundred to one. It took less than two weeks to start this bombardment of letters.

A bill was recently introduced into Congress which beekeepers know as the Cole bill, which if it had been passed in its original form, would have menaced beekeeping. When this became known, leaders in beekeeping of all sorts of "political" faiths wrote to warn beekeepers of the danger and asked that they write letters to their Congressmen. I wish that it might be known how many letters and telegrams against the Cole bill have gone to Washington from beekeepers, but enough went so as greatly to worry the corn sugar people—so many that they got the idea that some one was putting up money to arouse agitation against their bill. They seemed unable to believe or to comprehend that a miscellaneous crowd of beekeepers could thus work together unless they were paid for it, nor did they seem able to comprehend that warnings could be sent to beekeepers generally without some one having an axe to grind. Those of us who know beekeepers and beekeeping laugh at such suspicions, and the corn sugar folks pay us a great compliment by being utterly unable to comprehend how there could be such co-operation.

Why, then, does any one ever say that beekeepers will not work together? We generally hear this from some enthusiast who wants beekeepers to unite on some plan which is his hobby, but who has failed to arouse the interest in it which he desires. Naturally the blame is placed on beekeepers generally, not on the plan or on its promoter. Beekeepers have, for example, failed to become excited in favor of federal apiary inspection, not because they do not know about it, and not because they have not been asked to assist with the plans, but simply because they have thought it over and have decided individually that there is nothing in it. They have likewise failed to support national advertising of honey, bonding of queen-breeders, and other national projects. Without the action of individuals there can be no co-operation, and the decision against federal inspection, for example, has been rather general. Then there have been presented to beekeepers all manner of plans for co-

operative marketing, national or statewide. In a few cases state organizations have been formed along these lines which are successfully conducted. In others the plan is formed, beekeepers are asked to join, fail to do so, and are then blamed for a failure to co-operate. Wherein does the fault lie?

These last instances are named, not to condemn federal inspection, any co-operative marketing plan, or the other schemes mentioned, but to defend beekeepers against false accusations. After having worked with beekeepers for some years, I have come to the conclusion that a beekeeper is pretty much the same sort of person as Mr. Average Citizen. Beekeeper or not, we enter enthusiastically into any plan only when there seems an adequate reason for so doing. I therefore respectfully suggest to those who favor movements which do not meet with general favor that they inquire what is wrong with the plan for general acceptance, and that he blame shall not be placed entirely on a failure of bee keepers to co-operate. To blame them is unfair, when there is probably no group of people in the country with a bond which brings about co-operation any more quickly when they see that it is really a worth-while project for each and every one. I have cited two cases where beekeepers gave money with no thought of any financial return, yet they sometimes fail to contribute when great returns are promised them. There is in all this the suggestion to officers of organizations that, to make a great association in any county or state, it is essential that the plan and program be such that they appeal to individual beekeepers as something which they can not think of missing. Then they will be at each meeting and will support the program well. As for co-operative marketing plans of national scope, we have had so many of those that they are no longer a novelty. Some day one may be proposed which is obviously good, and when that day comes there will be a thousand members in a month and steady growth thereafter. Until then, we shall probably be blamed for lack of co-operation. E. F. Phillips.

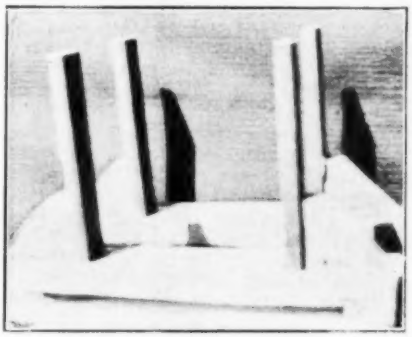
Ithaca, N. Y.

PREPARING COMB HONEY SUPERS

How to Apply Paraffin to Sections to Prevent Their Being Propolized

In the production of comb honey preparation means much, not only in getting the bees in the proper condition but also in having an ample supply of supers filled properly, so the starters will stay in place in case a large colony occupies them as soon as they are put on, or in case a colony does not occupy the super as soon as put on and the super is subjected to the heat of the sun for some time.

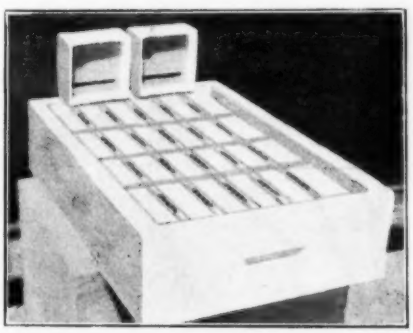
I use both bottom and top starters, for, with our cool nights, many colonies commence on the bottom starter before occupying the whole super. Many starters



Clamp for holding 500 sections white being dampened.

come loose at the corners and fall down because of improper dampening of the sections for folding, since melted wax will not adhere to wet wood.

Since the manufacturers now pack their sections in paper cartons, it is more difficult to dampen them than in the old-style wooden crate, so I have made a



After sections are in the super paraffin is painted on their tops along the edges to prevent propolizing.

sort of wooden clamp in which I place the carton of 500 sections. Then by pushing two wedges down between the crate and the uprights of the clamp the sections can be properly dampened. Cartons for sections should be made to hold one hundred in a tier, then they would be only five tiers deep, which is a help in the proper damping of sections.

I am sending you a picture of a super properly filled, and, I think, properly

waxed with paraffin. I was hoping that the paraffin would show in the picture, which it does but faintly. I have the paraffin very hot, and to apply it I use an inch brush held at an angle of 45 degrees, drawing it swiftly over the opening of the sections with one-half of the brush on each row of sections, then across the super where the rows of sections join, with one-half of brush on each row. This leaves the middle of the section unwaxed where the bees very seldom put any stain. I used twenty-six pounds of parowax in waxing 1600 supers. I could wax one super per minute, including the handling. By leaving the middle of the section unwaxed a place is left to stamp the weight. At the side of the super over the one-half opening, the brush should be drawn edgewise, for that is the place where most colonies prefer to put their propolis, and sometimes they close this opening entirely; but if properly waxed they do not do so.

Hyrum, Utah. M. A. Gill.

CENTRAL EXTRACTING PLANT

Equipment Adequate for Taking Care of Crops of 100,000 Pounds or More

For the benefit of numerous correspondents who have asked for a description of our main extracting plant at Markham, where the building is so constructed that the use of honey pumps is not necessary, gravity being used instead, I am sending this picture of the building taken this winter. Since the paint on the building is light cream in color, and there is snow on the ground, the contrast is not as good as it should be; but the picture is sufficiently clear to show the general plan of construction.

I have noticed that those who have visited the best equipped extracting houses in Ontario, and have then seen this one, have expressed themselves without exception as being delighted with the plan of this building. Of course, there are some honey-houses much better equipped so far as internal arrangements are concerned; but that matter can be arranged to suit one's personal tastes, and has not much to do with the question of having one main floor, or two, as this building has.

The main building is 48 feet long and 24 feet wide, while the garage on the south side, built as a "lean-to" to main building, is 12 feet wide and 24 feet long. The building faces the highway, and the large doors at the left in the illustration are on a level with the highway, and open into the basement. Trucks can go in on a level for loading honey when shipping. The front of the garage is set back 12 feet from the front of the main building, to give more distance from the highway to provide a grade easy enough to allow loaded trucks from out-apiaries to go in without any trouble. The basement walls are of concrete, and are eight feet high. On two sides and in the rear this wall is in the ground four feet, and four feet above ground. The building is located on a gravelly knoll and the floor is always dry. But, to be absolutely sure that no

J. L. Byer's central extracting plant. The extracting room is on the ground floor and honey tanks are in basement below.

moisture is present in extracting-time, a small stove using hard coal has a fire in it all the time. While this stove uses only a scuttleful of coal in two days, yet the basement is made bone dry because of this small fire. There are four large windows in the side to the left of building, two in the rear, one just back of the garage, one in front of the garage, and two in front as shown. These provide an abundance of light and ventilation when needed. All windows are hinged at the top and arranged to swing in, and have fastenings to hold them up inside.

The basement is very comfortable to work in during hot weather, as the temperature can be controlled as desired. Another feature we appreciate very much is the almost complete absence of house flies in this basement. These common pests are all too frequently seen in great numbers in honey-houses that I have been in, and the work of filling tins is often greatly hampered by their presence, not to mention the fact that more than once I have seen pails of honey opened and found a fly or two on top, that had been caught in the stream when the pails were being filled, and had not been noticed by the operator.

The floor of the basement is of concrete and we never worry about the foundation giving us trouble. On one occasion 100,000 pounds of honey was piled on this floor and the strain was not noticed in the least. This large basement is used for honey storage. The honey runs direct from the extractor above into tanks in the basement where all filling and crating are done. In one corner of the basement in the rear of the building, a space 12 by 12 feet is partioned off and used as a wax-rendering room. As it is absolutely bee-tight in every way, foul combs that are found during the season are stored here until we have time to melt them up. A three-horse-power boiler is located in this room. It is used only for heating the large wax-rendering vat. Steam is conveyed from the boiler to the vat four feet away, and the vat is heated by means of coils in the bottom. The vat is made of wood, which holds heat for a much longer period than does metal, and is not as hot to work around when at the job of rendering wax. The chimney from this room, the top of which is shown in the illustration, was a "penny-wise, pound-foolish" proposition. To save cost it was built with large-sized glazed tile. While I think this is perfectly safe, insurance companies think otherwise, and when carrying heavy short-term insurance on two occasions, enough extra premium was charged to pay for a brick chimney.

We do not use this three-horse-power boiler for power, because we have electricity in the building for lighting and power purposes. A 1½ horse-power repulsion-type motor gives us splendid service at about 15 cents per day of 10 hours. As we have not had a minute's trouble with this motor in two years' use, we would not consider any other kind of power, even if the engine was donated to us.

The unloading platform in the garage is on a level with the floor of the extracting-room, and when unloading supers brought in from out-apiaries workers walk to the truck floor on the level. This large room on the extracting-floor is all available for extracting operations and piling up empty supers, except the small space taken up by stairways and a workbench in one corner of the room. This is one great advantage of having a garage attached, as the truck room takes up much space in many extracting buildings. The main extracting-room is 10 feet 6 inches from floor to ceiling, allowing much space for piling up supers at the close of the season. The upper story is used for storing light material such as feeders, frames in the flat, etc.

Markham, Ontario. J. L. Byer.

REQUEENING AUTOMATICALLY

Young Queen Reared in Super and Introduced Without Finding Old One

Each June I prepare every colony for the honey flow by using a modification of the Demaree system. No attention is paid to the cells which are generally built in the upper stories. I have been told that in some parts of the country bees will swarm unless such cells are destroyed, but I have not found it to be so in this locality. Most of my covers are of the flat reversible type, and in July I push the covers forward so that they rest on the back cleats and allow better ventilation. Any virgin queens that may be in the upper stories now have a flight hole above the excluder, which they generally use. Many queens are thus reared and mated each season.

Unless these queens are removed soon after beginning to lay, the bees devote their energies to brood-rearing instead of storing honey. When I know that the queen below the excluder is an old one I take the young one out of the supers, after she has established a fair brood-nest, and shake her, together with the bees from several combs, in front of the entrance of the lower brood-chamber. I have never known of one of these young queens failing to supersede the old queen.

The drawback to such a method of requeening is that we never know which colonies are going to build the cells and produce laying queens. Then it takes time to look through several supers of honey for a queen, and the beekeeper knows that unless he finds and removes her his crop will be cut short.

To arrive at a more satisfactory method of rearing queens in an upper story, in 1923 I experimented with colonies that had cells in the upper stories by placing excluders below the cells. The brood-chamber has an excluder on it and the supers are placed directly above this excluder in the usual manner. The hive-body on top of all sits on another excluder and contains brood and one or more queen-cells. The raised cover is on top. When I tried placing small nuclei over top excluders on strong colonies it seemed to work as well as though the brood and cells were their own.

I do not claim that this is an infallible plan for requeening, but when used during a good honey flow the young queen seems to have no trouble in replacing the old queen. I do not suppose that a young queen from the top story would be allowed to supersede a young queen in the brood-chamber—at least without a fight. If I am in doubt about the queen below being an old one, I look her up before attempting to put the young one below.

Every season a few queens are accidentally killed in the apiaries. If discovered at once, I leave the colony as it is, remove the cover, place several thicknesses of newspaper and an excluder on the top super, then get a nucleus containing a laying queen from the top of some colony or elsewhere, and place it on top of all. The cover is raised so that the nucleus will not suffocate before the paper is gnawed away. On my next visit to the apiary I remove the nucleus, which has developed a good brood-nest, and place it on the bottom in place of the old brood-chamber. C. S. Engle.

Sioux City, Iowa.

OVERCOMING COLD WIND

Using a Large Umbrella as a Shelter When Working with Bees

Even in California the north wind blows in the spring. The beekeeper is often hindered from working in his apiary at the time of year when inspection is most needed. You will hear him on every side saying, "If it were not for this north wind it would be warm today, but I can't open up the hives on a day like this; it would chill the brood."

The last time I was in Chico, Friend Heath said to me, "Come out to the apiary with Johnson and me this morning and we will show you how to graft queen-cells." "Surely," I answered, "this north wind would freeze the eggs." He assured me that he had overcome the north winds, so we climbed into the automobile and drove out.

In spite of the bright sunshine I was cold through when we reached the apiary. "Come here in the shelter of the honey-house," said this biggest bee-lover of Butte County, "and see how warm it is." Sure enough, it was like a summer day.

Then Heath and Johnson brought out a big white canvas umbrella, the kind draymen use on their express wagons to

A large umbrella as protection against cold wind when grafting queen-cells.

keep off the sun in summer. This they set up on the north side of a colony, then opened the hive and went to work.

I roamed about the apiary through last season's dried-up star thistle until I felt sticky. I had on low-cuts. Between the briars and the north wind I was becoming impatient for them to get things ready to graft. I went back to the honey-house, found a veil, then sneaked up on the men at work. I was going to see for myself if it were warm behind that shelter. I thought that if the bees bothered my ankles it would not be much worse than the star thistle briars. Heath had told the truth. Why worry about wind?

Not only in California and Kansas does the north wind blow, but in all parts of the country. Often in the early spring the ground is warm, the sun shines encouragingly, but the wind makes a chill in the air. The white canvas adds both light and warmth. Try the "umbrella cure." R. Beatrice Lane.

San Francisco, Calif.

SIFTINGS

by J. E. Crane

It was news to me that the amount of beeswax used in foundation is small compared to other uses. See page 286.

* * *

That idea of the Montreal Beekeepers' Association (page 301), of inviting a large number to their meetings and giving to each visitor a small package of honey, is a good one and worth repeating in other places.

* * *

That is a splendid article by Morley Pettit, commencing on page 288, on the "Evolution of the Extractor." There are some good folks who don't believe in evolution, but it seems as though almost everything in this world that amounts to anything has evolved from small beginnings. Look at the infant of a few days and the mature man. I was yesterday looking at pictures of locomotives of one hundred years ago and those of today. Those built long ago look like steam wagons that could be made to go at perhaps ten miles an hour; while the great locomotives of today can draw a train half a mile long with thousands of tons of freight.

* * *

One hundred fifty years ago our country was a few struggling colonies on the Atlantic coast, with a population of 3,000,000, while today it is a mighty nation stretching from the Atlantic to the Pacific and from Canada to the Gulf, with a population of 110,000,000, with all parts bound together by iron rails and the bonds of friendship and commerce.

* * *

Mr. Pettit gives us the history of the honey extractor from the first one-comb hand extractor to the last advance, the giant power extractor that throws the honey from both sides at the same time, and it is mighty interesting reading. At first he said he did not believe half the honey could be thrown out without reversing; but after he had extracted more than a hundred thousand pounds without reversing he says, "I would no more think of going back to a reversing extractor than I would adopt box hives in preference to modern equipment in the apiary." This is great praise.

* * *

I was glad to learn, on page 296, that E. R. Root is to go on the lecture platform again this year. I wish we had 500 other men as good engaged in the same work. Then honey would come to its own and beekeepers all over our fair land would look up and smile, and the cry would be not "where can we sell?" but "where can we buy at reasonable prices?"

* * *

More and more, as time goes by, the food-chamber is being used and appreciated. On pages 291 to 294 M. J. Deyell goes over the whole subject, illustrating as well as describing its advantage over old methods of management. It seems as though the food-chamber has come to stay. Every method that will save time and labor should be appreciated. It will not cost much for a beekeeper to try it on a few hives.

* * *

The Editor of Gleanings gives a wholesome warning of the danger of spreading foul brood by burning diseased colonies. He is quite right. It is often difficult to burn hives heavy with honey without having the honey run over the ground more or less, unless you have other fuel than the hive or hives you are burning. I have sometimes found it safer to dig a hole and bury hive, bees, and honey, and cover deep with earth.

* * *

W. J. Nolan informs us on page 301 that the largest beekeeping library belongs to Thos. W. Cowan. There appears to be a good deal of enthusiasm at the the present time in building up large libraries, and I fear beginners will get the idea that access to such libraries is essential for success. Really, I don't believe it is. If a beginner can have a few standard works, such as Quinby's "Mysteries of Beekeeping Explained," Langstroth on the "Hive and Honey Bee," "The Honey Bee," and the "A B C and X Y Z of Bee Culture," together with Gleanings in Bee Culture and the American Bee Journal, he may feel that he is well equipped.

* * *

On pages 298 and 299, that wizard of a beekeeper and queen-breeder, Jay Smith, tells us how to bag a swarm of bees, and his article is well illustrated, too. The fact is, Mr. Smith has learned, as some of us older beekeepers have, there is nothing more convenient to shake a swarm into than a light airy bag. If you have one with a hoop around the mouth and a handle three or four feet long, it is often very convenient, for as soon as the swarm is shaken into it you can turn the hoop half way round and the bees are secured, when you can carry them where you want and they will not leave as when shaken into a basket.

FROM FOREIGN LANDS By W. J. NOLAN

MVGrad. Jaroslav Rytir, of Czechoslovakia, has recently published a very creditable work on the anatomy of the honeybee.

At the recent honey show of the Aberdeenshire and Kincardinshire Beekeepers' Association, 4360 paid admissions were received, reports the Scottish Beekeeper for March.

A memorial to the late Isaac Hopkins, "Father of Australasian Beekeeping," is being considered by the New Zealand Beekeepers' Association, according to The New Zealand Fruit grower and Api arist for March.

Alin Caillas, of France, began in the Bulletin de la Societe Romande d'Apiculture for April a series of articles dealing with the composition of nectar and honey. He has found nectar from orange trees in Spain to contain 72.5 per cent water.

The Ministry of Agriculture in Argentina has viewed with favor the request of beekeepers that government work in beekeeping be undertaken, states a recent issue of Revista de Apicultura.

A smoker in use among the native Algerians is described in La France Apicole for April. It is made of clay, being somewhat cylindrical in shape, and is open at one end but closed at the other. A handle is provided at the open end by prolonging one of the sides. A series of holes extending around the outside lets out the smoke.

According to L'Apiculteur for April, the British Beekeepers' Association has offered to collaborate with La Societe Centrale d'Apiculture of France in publishing at the end of each year the results of noteworthy beekeeping experiments conducted during that year.

An export control act for Australia similar to that in force in New Zealand is advocated by an editorial in the Australasian Beekeeper for March. It is contended that, due to the present lack of any restrictions on the exportation of honey, careless beekeepers have injured the export market for the Australian product by selling low-grade honey as table honey.

A "smoke box" to drive bees out of extracting supers is described in the same issue of the Australasian Beekeeper. This consists of an inverted box of the same size as the super. When used it is placed directly over the frames. Smoke is then puffed into it through a couple of holes bored in one end, corks being provided to close the holes. It is claimed that most of the bees are driven out within a few minutes.

Among the new bee journals of the year is the Opitnaya Paseks, published in Russian from the Experimental Apicultural Station at Tula. On the editorial staff are F. A. Tunin and A. C. Mikhailoff. Among the various collaborators is the widely known Professor Koschevnikoff. In the first four issues have been given the results of recent experiments at the Tula station on wintering, swarming, nosema, colony population, and other phases of beekeeping. Besides other original contributions, translations and abstracts of important articles from various countries have also been published.

Switzerland may be divided into three different regions, each being characterized by the language spoken. German is commonly spoken in one of these regions, French in another, and Italian in the third. The beekeepers speaking each language have their own central beekeeping organization and journal. The periodical of the German-speaking beekeepers is the "Schweizerische Bienen-Zeitung"; that of the French-speaking beekeepers is the "Bulletin de la Societe Romande d'Apiculture"; while of the Italian-speaking beekeepers it is called "L'Ape."

A description of the German-speaking beekeepers' association in Switzerland appeared in the Bienen-Vater for March. In 1924 it had 16,872 members in 126 local societies. At the head of the central organization (besides the president, secretary, and treasurer), are four members, to each of whom is delegated a special field. Thus, among the duties of one of these members is the supervision of the work in race-breeding carried on by the association. A second is chief of the 48 observation stations maintained at various points. At these stations weights and observations of scale colonies are obtained throughout the year, as well as data concerning weather and plants. To a third member is delegated the carrying-out of the "honey control" provisions whereby the public is assured that the product of the members of this organization is up to a certain standard. Among the duties of the fourth member is that of supervising the insurance system of the association. This includes insurance against certain bee diseases, a matter which has not been given much attention in American beekeeping literature.

FROM NORTH, EAST, WEST AND SOUTH

In Southern California

"As Easter goes, so go seven Sundays," seems to be true this year. Easter was wet and it has been rainy each Sunday since. April proved the wettest of which we have any record in southern California. From six to twelve inches of rain fell over much of our honey-producing territory. While some colonies filled one, two, or in a few cases three supers from the oranges, others have only just comfortably filled the brood-chamber.

The heavy rains of early April stopped the storing of surplus for about two weeks, but about April 20 the orange again yielded in abundance. Some groves had passed through the blooming period, while others, growing under different soil conditions, bloomed for a week or ten days longer. Most beekeepers will get some orange honey, but from present prospects the crop will probably not be as good as last year. Bees have been very slow to cap the honey this year. This, together with the unfavorable weather, has put almost all bee-men behind with their work. The weather has been cool, cloudy, foggy, and often drizzly for days at a time.

But the ground is moist to a good depth and conditions are favorable for honey later on when the weather turns warm again.

In driving over the outside ranges of the country we observe that there is a wonderful growth of all wild plants and shrubs. Deerweed (wild alfalfa) is growing in great luxuriance. I don't think we ever saw such an abundance of this plant. It makes a pretty sight with its small yellow blossoms scattered along the stems of green with tiny leaves between. Sages have also made a wonderful growth. Especially is this true of the white sage. Not for many years has it sent out such long blossom-covered shoots. Prospects for a honey crop are much better than a month ago. Of course, there's many a slip, etc., but it will be remarkable if those beekeepers who have their bees in condition do not get well paid for their work with the bees this year. The better prospects have encouraged people so that the demand for bees has increased, and several apiaries have changed hands at good prices.

The honey market is very slow. Considerable old honey is on hand yet. Buyers seem to be waiting to see what the crop will be this year. The market for wax stays firm at around 38c.

Corona, Calif. L. L. Andrews.

In Northern California

Beekeeping operations during the past month have progressed in a normal and satisfactory manner. If anything, the season will be somewhat late. The early flows from deciduous fruit bloom, mustard, wild radish, and other early sources proved to be decidedly beneficial. Along the central coast counties colonies are reaching full strength on filaree, poison oak, bearberry, and, in some restricted areas, on lupine. The sage is expected to secrete any day now (May 5), and with the bees in their present excellent condition a good crop is to be expected. The control of swarming this year was no problem at all compared to that of last spring. In short, everything now looks like one of the good old fashioned honey years that the old-time beekeepers used to tell us all about. However, let us not be too optimistic.

There is no change in the honey market; honey is dull, with very little moving, and wax continues to be most active. There is a probability, providing wax stays around its present high price, that some of our many beekeepers will be a little bit more careful in caring for their combs, bits of wax, and slumgum. I do not believe I am overestimating the amount when I say I am of the opinion that at least 25 per cent of the wax in combs that bees do not have access to is lost annually. By this I do not include bees living in trees and rocks unattended by man, but only those that are looked after (?) by the beekeeper—or rather, the would-be keeper of bees. It is needless to add that this great economic loss is due almost entirely to bee moths. Of course, the beekeeper proper does not have such a large loss, but it is the amateur and the farmer who sooner or later neglect their bees, either because their interest in beekeeping has flagged or because of poor seasons.

It is a fact that almost every farm, orchard, country place or the like may be said to have its one or two colonies of bees. Swarms issue every spring, and sooner or later we hear, "I used to have bees, but the moths got them." Professional bee-men usually make it a practice to buy up all the bees in their vicinity, owing to the possibility of contamination through disease. This is a step in the right direction, but there is still much ground to cover before we have cut down appreciably the large waste in beeswax.

Monterey, Calif. M. C. Richter.

In Arizona—Stormy weather and rains continue even though extracting has begun in most localities. The nights remain cool and, with rains so frequent, conditions are not considered best for mesquite and catsclaw. Mesquite is just beginning to bloom but does not look very well.

Swarming has been more general over the state than usual. A few colonies of each apiary have developed paralysis, which has not been present for several years past. It looks as though pests of various kinds will be more general than usual this year.

It is hard to say what the main honey plants will do this season owing to the continued stormy weather, which I believe most beekeepers are hoping will soon come to an end.

I have just extracted my first apiary, and got a better yield than I expected. Mesquite and catsclaw, our main honey plants, are not yet in bloom here.

Oracle, Ariz. Leslie Wedgworth.

* * *

In Texas—The spring of 1926 will be long remembered by beekeepers here as one of disappointment and discouragement. The bees have tried to do their part and the honey plants have bloomed in profusion, yet cold weather, accompanied by continuous cloudy days with frequent rains, has prevented the bees from visiting the flowers. Cycle after cycle of brood has been produced, but the low temperature has chilled some of it so that colonies strong in January are not at the present time strong enough to gather a honey crop if a flow should start suddenly. The disappearing disease, that mysterious combination of diseases or physiological condition which becomes epidemic during cold damp springs, is reported as being common in all of southwest Texas.

Reports from the field regarding this apparent bee disease are just as contradictory as those that have come in during former outbreaks of the trouble. One beekeeper having a large number of apiaries affected reports that requeening brought about a complete cure. A neighbor of this man, living not ten miles away, reports that requeening was a total failure in his case. It is not my purpose to revive the endless wrangle that has occurred in the past over this trouble, but we can say definitely from observations made this year that the dying of the old field force before a new one was ready for the field is the greatest factor in the trouble.

Crimson clover is an annual legume grown throughout the southwestern part of the United States as a winter cover crop. It does not seem to have been tried in Texas to any great extent. During the past winter several small fields of this clover were tried in the San Antonio region. The plants did very well and have bloomed throughout the month of April. Honeybees have worked the blossoms extensively, but from the small area planted to clover it is hard to say anything about its value as a nectar producer. For the benefit of Texas beekeepers who desire to try a plat of this clover I can say that the seed may be purchased from any dealer. It should be sown at the same time that oats are usually sown. If there is moisture enough to bring up the oats, the clover will come up. The seed bed should be about the same as for oats. The clover will grow very nicely all winter and hold together any soil that is liable to wash or blow. This plant, during years when there is moisture to bring it up, forms an ideal cover crop for an orchard or field.

The Texas Beekeepers' Association will hold its annual meeting during the first week in August at College Station, Texas. Every beekeeper should plan to attend this meeting, as it will be one which will largely determine the future of beekeeping in this state. The industry has reached the point where the various interests of the state must be joined to secure co-operation and self protection.

Despite all of the hardships that the beekeepers have suffered during this winter and spring, they are showing the optimistic spirit common to beekeepers everywhere. Full colonies are being sold at good prices, and the demand for queens exceeds the supply. Dealers report the sale of bee fixtures as being good. H. B. Parks.

San Antonio, Texas.

* * *

In Louisiana—Prospects early in the season indicated one of the best honey flows for years. The trees and vines were massed with their beautiful nectar-laden blossoms, in as fine condition as has ever been known before, and the bees were of such strength that it was an uncommon thing to find a colony with no more than 75,000 workers. The hopes of all beekeepers were that this year's crop would be the one to date from for years to come. In fact, everything in sight had a golden lining, and then the rains with the cold damp days came. For the past six weeks there has been only a day or so in each week in which the bees could gather nectar.

The tupelo has blossomed and is a thing of the past. I have a small apiary

near a tupelo swamp which is about a mile wide by ten miles long. Just as the trees came into bloom I visited this swamp on a beautiful afternoon. The bees were doing everything in their power to gather the entire crop. The tree tops in the swamp had the hum of an immense swarm of bees. Prospects were never better, but the next day the rains came and stayed with us for a week. When it ceased I noticed the bees were flying in other directions. Our crop to date is only about an average of fifty pounds per colony. With the fine prospects early in the season, it should have been three times as much. While the rains continued brood emerged rapidly, congesting the brood-chambers, and trouble began. A beekeeper had to be a sure-enough expert this season to prevent swarming.

For the past four weeks the Extension Department has been putting on a campaign covering the honey and dairy branch of this division. We are trying to make Louisiana a land that will flow with milk and honey. These meetings are well advertised by posters, printing the date and "admission free" in large box-car letters. All of our meetings are held at night, as we want the farmers from the field to come. The meeting is a free moving picture show. If Mr. Root could drop in on us at some of these meetings he would think he was back on the Redpath circuit. It is surprising how free moving pictures will attract the rural inhabitants. The whole family comes, and on two occasions we had to move our sheet to the outside of the church or school house so that all could see. Our crowds ran from 400 to 800 people each night. Very few times did we fail to hang out the "standing room only" sign. The dairy specialist has two reels, and I have two reels on beekeeping, one from the Department of Agriculture and the other loaned to me by the Ford Motor Company. Both of the reels are very entertaining—one entitled "Bees: How They Work and How They Live," and the other, "In a Palace of Honey." Besides the above we have a really funny comedy. We make talks before the reels are shown, and it is surprising how close one can get to the farmer through these pictures. After the "show" each night many men and women come to me and give their names for literature on beekeeping.

We have yet ahead of us three weeks of these meetings and I don't know of anything that will bring the modern movable frame hive closer to the farmer than his seeing the actual work in these pictures. I have tried all kinds of schemes, and I believe this is a "home getter." E. C. Davis.

Baton Rouge, La.

* * *

In Michigan—The city of Highland Park proposes to enact an ordinance prohibiting the keeping of bees within its corporate limits. The Secretary of the Michigan Beekeepers' Association has submitted a strong protest to such action to the Mayor and the City Attorney, and has cited cases of precedent to prove that such action would be unconstitutional.

To prove that the wintering of bees in the Upper Peninsula is entirely practical and feasible, I quote from a recent letter received from Mr. T. J. Davis, Rudyard, Chippewa County, as follows:

"We placed 155 colonies in the cellar last fall, 32 being carried in November 4 and the balance on December 2. These were taken out the 24th of April, the first group having been in the cellar 171 days and the balance 143 days. Out of the total we lost one colony only. When carried out, most of the colonies had plenty of stores. Only a very few will need syrup to build up on. I find that the Carniolans are strongest and in the best shape."

Mr. Davis states further that his 1925 crop was sold before November 10 last, and he has since sold the crop of a neighbor beekeeper and is now buying from another Cloverland commercial apiary in the county.

The extremely backward spring weather has noticeably checked normal brood-rearing and has drawn heavily on stores. In going through the State College apiary we found many colonies with less than four frames of brood on April 23. It is anticipated that considerable feeding and uniting will be necessary, even if the weather becomes normal immediately. Mr. H. M. Krebs, Director of Apiary Inspection, reports that the abnormally cold spring weather is seriously holding up his inspection work, but that everything is set to go the minute the weather permits.

Dr. V. R. Gardner, head of the Horticultural Department here at Michigan State College, gave a very interesting paper before the beekeepers' seminar recently. Dr. Gardner declared that, after a study of statistics showing yields for various varieties of apples in Michigan from 1921 to 1925, it was found that some of the more popular self-sterile varieties of trees of fifteen to thirty-five years of age showed exceedingly low average yearly yields—in the case of Mackintosh Red 1.7 bushels per year per tree, and

for Delicious .7 bushel per year per tree. The normal yields should have been above 15 bushels per year per tree, and Dr. Gardner feels that the greatest factor influencing the low yield is a lack of bees for pollination during the blooming season. It is recommended that fruit-growers rent bees for pollination from the beekeepers, and it is probable that a special effort will be made to get the beekeepers and the fruit-growers together on this subject. It is estimated that, at the rate of one colony per acre of orchard, there is room for 6000 colonies of bees for rental to orchardists at $5.00 per colony in Berrien County alone.

East Lansing, Mich. R. H. Kelty.

* * *

In Wisconsin—This is May 3, and bees have been working on willow for several days. The first pollen from tag alder was gathered on April 19 this year, which is a week later than the average here. The weather has been switching from one extreme to the other for several weeks. It seems it is either cold or hot. As the little girl said, "As soon as it is warm enough to do something, it is too hot to do anything."

In general bees have wintered well. There are some reports of heavy losses, but such reports are few. The loss is mostly only such colonies as were not normal in the fall. It is unfair to call this a winter loss just because bees tried to winter over in a queenless condition, whether such condition was known or not. A normal colony in the fall is usually a normal colony in the spring, except, of course, under extreme weather conditions. I believe that from five to ten per cent of all winter loss that is generally reported is not winter loss, but really a late summer or fall loss which does not show up until spring. Just now clover plants appear to be below normal.

Dr. Fracker, in charge of disease control for Wisconsin, has invited all local associations to ask their respective county boards to make an appropriation to fight—or rather, to clean up—disease in their counties. The state will provide twice as much as the county. Our local beekeepers asked our county board for $300, and it was voted for unanimously. With the state addition of $600, the funds will be sufficient to clean up this county in fine shape, as disease really is confined to several small areas in the county.

The movement of honey is slow, and quite a few beekeepers still have some on hand. They feel that it will be necessary to hold it over, much against their will. If another large crop is harvested it surely will force the producers to spend some money to advertise and at least try to induce people to use more honey. Edw. Hassinger, Jr.

Greenville, Wisconsin.

* * *

In Alabama—The weather during this spring has been very changeable. Just after the article was mailed for April Gleanings, stating that the weather was fine and there should be no shortage of package bees this year, we had the coldest weather that we have ever had in March, according to the local weather bureau. This was a serious blow to the bees and especially to the package shippers. One shipper accused us of getting him in bad with his customers by writing such an article.

Since the first ten days in April the weather has been very favorable, and most of the bees have built up rapidly, allowing shippers to fill package orders much better than they had hoped earlier in the season.

From letters that we have had from all parts of the North, it appears that winter losses have been heavier than they have been before in many years. Many customers report that colonies that were not lost are weak, and many have ordered queenless packages to strengthen them. The demand for packages has been greater than at any time since the World War.

Our white clover is just getting into a good way of blooming and is yielding well. The sweet clover is rather scattering, but the plants are looking good. With favorable weather conditions we should get a good flow from it also.

We know of no honey in this section that is not sold, and with the old crop entirely cleaned up there should be a good demand for the new crop if we can produce it. J. M. Cutts.

Montgomery, Ala.

* * *

In Idaho—The locust trees are ready to burst into full bloom (May 9) and a week of good warm weather would give a good flow of nectar from this source. As a general rule, colonies are reported to be in good condition, heavy in brood and having a good reserve of stores. Fruit bloom in April gave a good honey flow for ten days, and warm weather from April 22 to the 28th brought considerable swarming. A noticeable feature of the honey market this spring is the heavy demand for extracted honey. All small producers are sold out, but some large producers have a few cars left over. Comb honey has sold very slowly all winter and grocers will be slow in buying next fall.

Boise, Idaho. Robert L. Scott.

In Iowa — It is likely a good thing for the beekeeper that the season is late, as the bees were not up to normal by any means on coming out of the cellar. Winter losses were in most cases heavy, running in some cases 50 per cent, and with some small inexperienced beekeepers as high as 100 per cent, but this, of course, is extreme. There are quite a few weak colonies reported, caused mainly by dysentery. This happened in bees wintered outside as well as those wintered in the cellar.

We have made no inside examination yet. At the first opportunity we put a shallow food-chamber on each of the colonies that needed it, and there were quite a few, for that is what bees need most under the conditions we have had. No amount of tearing them to pieces early in the spring will do any good, but rather harm. We quit "monkeying" with bees early in the spring years ago, knowing that we have at times done more harm than good. There is little use to spend time with a weak colony here, as our spring will not, as a rule, permit taking brood from other colonies to build up weak ones. It is simply a case of robbing Peter to pay Paul, and many times the weak colony is still weak and the one from which brood has been taken is set back very materially. It is better to wait until later in the season, when brood has less value, to make up the winter losses. This is one thing that is hard for beginners to give up. They hate to lose a colony, and will usually rob good colonies of brood to build up the weak ones.

The market for honey is slow. We are getting some local calls, but no large quantities are being moved. We are expecting it to move some better because canned fruit is running somewhat low at this time of year.

The prospects for a honey flow from clover seem to be good at this writing, but it is a little early to make any definite statements, as the grass is just nicely started. While we are not badly in need of moisture, a good rain would help everything.

Some beekeepers seem to think the "corn sugar" bill is nothing to be afraid of, while others think it is a dangerous thing. The price will have to be reduced very materially before there will be much of it sold, as those who have tried it say that it is very noticeably lacking in sweetness as compared with cane sugar or beet sugar. The present price is very little less, but if it ever becomes popular there will have to be a decided reduction. W. S. Pangburn.

Center Junction, Iowa.

In Ontario—Weather conditions in Ontario have continued very unseasonable, and I understand official figures show that this is the coldest season in 50 years. An unusual sight for us in this part of the Province is that of deep snow banks in May in some sheltered woods where the sun has not penetrated very much. Naturally the bees are backward in keeping with the weather, and many heavy losses from starvation and dysentery are reported. Our own losses here in York will run over 10 per cent dead, with many that are left quite short of stores. At the Binbrook apiaries, where all colonies were fed solid, wintering has been good and there is no shortage of stores apparent yet, even though the hives there are only equal in capacity to the eight-frame Langstroth. After a winter of six months' duration, nothing more effective in way of proof that bees conserve their vitality and their stores when crowded into a comparatively small space on solid stores could be offered. Theory is all right, but when practice shows that certain theories are not always right it is then time for us to revise our theories.

Reports as to the condition of clover differ very much. Generally speaking, where the ground is high and where it was protected with snow, the clover is all right. On low ground it has suffered. In our own locality hundreds of acres of alfalfa have been killed wherever drainage is a bit deficient. At this date, May 10, pollen has been carried in on only two days, and no nectar whatever has been gathered. However, we are hoping that Old Sol will soon show his face more frequently and that, after all the discouragements so far experienced this season, we may yet get a crop.

Honey is moving none too freely, and from what I can learn quite a lot of last year's crop is still on hand.

As we have been unable to examine the bees very much yet, the extent of our troubles for this season from our ever present friend (in a small way at least) American foul brood, is not known. However, in examining the combs of the 10 per cent of dead colonies, we have not found any diseased.

With a late season, heavier winter losses than usual, and a lot of bees short of stores, surely there would be something to be grouchy about if we were looking for excuses for being grouchy. But there is no use in worrying over things we can not help, and after all, as "Old Drone" would be apt to say under like circumstances, one can always go fishing. The trout have wintered fine and have been biting well. What more could one wish? J. L. Byer.

Markham, Ont.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Brood to the Top-Bars When a super is above a brood-chamber, especially a shallow one, brood will be found nearer if not right up to the top-bar of the frames below. The chamber above gives clustering room above the top-bars of the combs in the brood-chamber, which is required by the bees to generate the warmth needed for brood-rearing right up to the top-bars; hence the amount of brood found there when room and stores are given above.

East Avon, N. Y. A. C. Gilbert.

A Handy Swarm-Catcher I am using a swarm-catcher which consists of a pole resting on two brace legs similar to those in the Manum. A light wooden box which weighs only

Swarm-catcher in operation. By pulling on the cord, the box is brought in contact with the cluster.

four pounds is snapped into a rope that runs around pulleys at the top and below. Another cord is attached by which, by pulling downward, the box is run up to any position, like a flag on a flagpole. The dangling cord can be tied to a hook below to hold the box in position. A second cord dangles from a ring beneath the box, and this is used to jerk the opening of the box against the pendent swarm. We leave the pole standing until the bees collect, then roll the box down, unsnap it, and carry it to the waiting hive. The pole has an 8-inch spike in the end to jab into the ground to hold it firmly. I. W. Cameron.

Viburg, S. D.

Demaree Plan for Comb Honey The Demaree method of swarm control, as used in producing extracted honey, can also be used in comb-honey production with the addition of an escape-board with the escape removed, placed over the comb-honey supers with the queenless brood on top. It would be a natural supposition that the comb-honey cappings would be stained, especially under the hole in the escape-board; but after three years' trial I find that not to be the case. Queen-cells can be raised and queens mated from the upper story, although it is probably better not to give an upper entrance for a few days after placing the brood above. It is also probable that not as much comb honey could be produced as by the method of stacking the brood on weak colonies, although the colonies so treated have the benefit of the emerging brood. After the young queen begins to lay above, the two brood-chambers can be exchanged and the old queen killed.

Wyoming, N. Y. Dellon D. Smith.

Percentage of Queens from Grafted Cells I began last season's work in queen-rearing by putting on the first graft on May 13, and had one helper. We grafted 85 times, grafting 100 cells each time. Of the 8500 cells grafted, 7650 were accepted and given to the cell-building colonies to be completed. The cell-building colonies accepted and completed 6330 cells. Of these, 578 were introduced direct into the nuclei, and 5752 were put into nursery cages. A complete record of the virgins emerging from these was not kept, but we found that about 8 per cent were lost. This would leave us about 5300 virgins. We planned on having more virgins coming on every day than could be used in the nuclei, so that only choice ones would be introduced. We gave 4453 virgins to the nuclei in Miller introducing cages. These, with the 578 cells introduced, gave us 4297 laying queens, approximately 50 per cent of the number of cells grafted. We found that, where cells were put into nursery cages and these hung in the upper story of strong colonies with a frame of sealed brood on each side of the nursery frame, the virgins emerged several hours sooner and were larger and more vigorous than were those that emerged in the nuclei, and that the nuclei accepted a larger per cent of virgins than of cells. Mell Pritchard.

Medina, Ohio.

A FEW MINOR SOURCES OF NECTAR IN JUNE

Upper left, wild blackberry; upper right, wild grape; middle left, high-bush cranberry; middle right, dogbane; lower left, ground ivy; lower right, wild raspberry.

TALKS TO BEGINNERS

Geo. S. Demuth

The month of June is full of possibilities of success or failure in beekeeping. The main honey flow should begin some time during the month in most localities, and, except in the extreme South where the swarming season may now be over, the month of June may bring the time for swarming. In some localities in the South the greater portion of the season's honey crop may already have been gathered, while in other portions the major portion of the crop is yet to come. But throughout the greater portion of the United States the main honey flow should begin some time this month, although in some northern localities it may not begin until about the first of July.

Whatever the time of the occurrence of the main honey flow, the colony should be watched carefully during the few weeks just preceding it to be sure that nothing shall interfere with the greatest possible amount of brood-rearing, such as a lack of honey or not enough room for the complete expansion of the brood-nest. In the North where the honey flow sometimes does not begin until the middle of June, or even later, many colonies are ruined nearly every year by running short of honey on the eve of the honey harvest. When bees are rearing such a large amount of brood as is needed to provide the great army of workers for the harvest, they consume a large amount of stores. In the clover region of the northeastern portion of the United States, for instance, there is usually a dearth of nectar between fruit bloom and clover bloom, just at the time of maximum brood-rearing. If colonies run short of stores at this time, brood-rearing will be stopped, and even some of the undeveloped brood may be torn out of the cells, thus greatly reducing the number of workers on the stage of action when clover comes into bloom.

The beginner should follow the rule of making sure that each colony has at least 10 or 15 pounds of honey in the hive all of the time until the honey flow actually begins. When the colonies run short, they should be fed by giving them at least an ordinary 10-pound honey pail filled with sugar syrup, this being inverted over the hole in the inner cover after having about 30 small nail holes punched in the cover. Sometimes a colony is found having more honey than needed, and others that are short, in which case a comb of honey from the one may be exchanged for an empty comb from the other. Those who have saved combs of honey for this critical time will find this method a very convenient one for feeding. This is where the food-chamber plan, that of supplying each colony with a shallow extracting super or a full-depth upper story containing combs filled with honey, is advantageous, since a large supply of honey stimulates brood-rearing at this season even though there is no nectar to be had from the fields.

After the honey flow actually begins, the rearing of a large amount of brood is no longer the chief goal in the management of the colony. Instead, the two outstanding things in management now become the prevention or the control of swarming and the stimulation of the storing instinct to the greatest possible degree by giving additional super room at the right time and in such a manner that the work of the colony shall never be slowed down on account of being crowded.

Swarming During Honey Flow Not Desirable

In localities where the swarming season occurs just before or during the main honey flow, as is usually the case except in certain southern localities, the loss of surplus honey resulting from swarming is one of the greatest reasons for failure among beginners. Having cared for the colonies in such a manner as to have at the beginning of the honey flow a great horde of workers in each hive, it is unfortunate that the instinct of the bees is now to destroy this condition by dividing its working force into two or more divisions, not one of which is strong enough to store much surplus honey, the energy of the bees thus being devoted to the keeping up of two or more families instead of to the storing of surplus honey. However, by the little trick described in these Talks in the May issue under the sub-heading, "Taking Care of Swarms," a division of the working force of the colonies can be prevented even though swarming occurs. The beginner should study this method carefully to be sure that he understands exactly how it is done.

It should be remembered that the old queen goes out with the prime swarm, under normal conditions, and that the swarm issues at about the time the queen-cells in which the young queens are reared are sealed. Since it takes about a week for the development of queen-cells to this stage, the bees thus give notice about a week in advance of their plans for swarming. By examining the combs of the brood-chamber once a

week during the swarming season it is possible to tell in advance which colonies may be expected to swarm. In many cases beekeepers who are otherwise employed during the day are able to care for quite a number of colonies by examining the brood combs to look for queen-cells once a week, then making an artificial swarm when a colony is found making preparations for swarming.

Destroying Queen-Cells

Queen-cells are usually built along the lower edge of the comb and can be recognized by their peculiar shape. The illustrations on pages 361 and 362 should help beginners to recognize them. Before the colony has definitely decided to swarm the little queen-cell cups will sometimes be found along the lower edges of the comb, but entirely empty. In some cases they may contain an egg only, and in other cases they may be far enough along to contain a good-sized larva and a large amount of larval food, which is a white substance of creamy consistency. When queen-cells containing only eggs or very small larvae just large enough to be seen by the naked eye are found, it is sometimes possible to induce the colony to give up swarming by destroying every queen-cell. This can be done simply by mashing them down with the hive tool, but it is usually necessary to shake some of the bees from the comb in order to be sure to find every one. If at the same time additional super room is given the colony may give up swarming and bend its energy to storing. But in many cases queen-cells will immediately be started again.

When well-advanced queen-cells are found containing large larvae and a large amount of royal jelly, destroying them does not prevent swarming. In such cases the colony can be swarmed artificially in case there will be no one at hand to watch for and care for the swarm when it issues. To do this, look through the hive carefully to find the queen, set the comb on which she is found in an empty hive or a box provided for this purpose, then shake most of the bees from each of the combs except two or three, the combs as shaken being placed in another hive and frames containing full sheets of foundation being placed in the hive from which the combs of brood were taken. The bees should be shaken either into their hive or onto a newspaper or board placed directly in front of the hive entrance.

The comb on which the queen is found can now be placed among the frames of foundation or the queen may be picked up by the wings and dropped into the hive or placed at the entrance so that she will run in. The supers are then put back on the hive. But unless an empty comb is placed among the frames of foundation a queen-excluder is now needed to prevent the queen from laying in the sections until comb is built. In shaking bees from the combs, those containing the finest appearing queen-cells should be transferred to the other hive without shaking and all other queen-cells destroyed. It is well to place at least one empty comb in the hive when the comb of brood containing the queen is not transferred as described above, since there is less danger of the colony "swarming out" when this is done. It is also well in the case of very strong colonies to place an empty super or an empty hive-body under the hive-body containing frames of foundation temporarily, thus giving the bees a large clustering place below the frames. This should be taken away within two or three days so that the bees will not build combs in this space.

The hive now containing the combs of brood is set close beside the other hive, but with the entrance turned slightly away so that the field bees will not enter it. If the artificial swarm was made at about the time the queen-cells were being sealed, this hive containing the old brood should be moved away on the seventh or eighth day as described for the "old hive" last month. If this is not done, an "after-swarm" is liable to issue soon after the first of the young queens emerges. By moving the hive to a new location not close to any other hive it will be so depleted of its workers that it can not send out an after-swarm, in which case all but one of the young queens will be killed. This young queen will then mate and become the future mother of the colony.

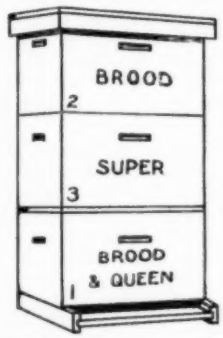
Inducing Bees to Work With Greatest Energy

Another cause of failure to secure a full crop of honey is that the bees may not work to their full capacity on account of some condition about the hive that can usually be corrected. It is less difficult to manage strong colonies so they will work with greatest energy than colonies of medium strength, or weak ones. Strong colonies are inclined to expand their work into each newly added super promptly, while colonies of medium strength or weak ones often begin work in supers reluctantly and crowd the brood-chamber, which brings on less energetic work.

If extracted honey is being produced and each colony was given a second story as advised in these Talks last month, a third story should be given at the beginning of the honey flow or as soon as more room is needed. At the time this

is done the queen should be put down into the lower story and confined there by means of a queen-excluder. An extracting super filled with empty combs is then placed immediately above the queen-excluder and the former second story is placed on top.

To put the queen down into the lower story, some prefer to find her to be sure that she is placed below, while others blow smoke over the frames in the upper story to drive her down. By taking out one of the outside combs and separating the others slightly, most of the bees can be driven down, which means, of course, that the queen also goes below. Nine or ten days after the queen is put below any queen-cells built in what is now the third story should be destroyed so that no young queens will emerge there. As the brood emerges in this third story the cells thus vacated should be filled with honey, and this hive-body now becomes a super, or it may be marked to leave on the hive as a food-chamber to supply the colony with an abundance of stores after the surplus honey has been taken away.



Previous to the main honey flow the queen had free range in two stories. At beginning of honey flow, queen is put into lower story and excluder put in place. A third story of empty combs is then placed on excluder and former second story is placed on top.

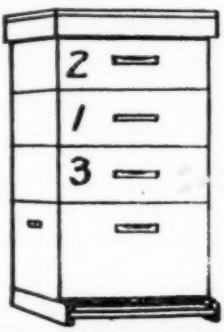
Close watch should be kept on the supers, and as soon as considerable honey is found in the outside combs of the last super given a new super should be added. If the honey flow is heavy, it is well to place each new super under those partly finished, thus putting it adjacent to the brood-chamber; but if the honey flow is slow and somewhat uncertain, especially toward its close, it is better to put the empty super on top in order that the others shall be better filled.

In case empty combs are not at hand for a new super, and frames of foundation must be used, it is well to take out four or five frames from the middle of the last super given and put in an equal number of frames of foundation. The partly filled combs that were taken out can then be placed in the new super with the frames of foundation, which is then placed above the other super.

Management of Comb-Honey Supers

When a strong colony is reduced from a two-story hive to a one-story hive preparatory to putting on the comb-honey supers, as described in these Talks last month, it is often well to give two comb-honey supers at once at the beginning of the honey flow, since such colonies may start in both supers. Colonies that have developed only far enough to fill a single story at the beginning of the honey flow will need only one comb-honey super at first. Where the main honey comes from white clover and alsike clover, the first comb-honey super should be given about a week after the first white clover blossoms are seen, since it is usually about ten days after the appearance of the first clover blossoms until the honey flow actually begins.

In giving additional comb-honey supers, a good rule to follow is to note whether or not the bees begin work in most of the sections at the same time. If they do, the second super should be given within a few days, provided the bees continue working well, even though the first super is less than half-filled. If they began only in a few sections in the middle of the super, a second should not be given until they begin working on the outside combs. In the latter case the second super may be placed on top, but in the former case it should usually be placed under the first one. Additional supers should be given in each case as soon as the bees are found working on the outside combs. During the early part of the honey flow, if the bees are storing rapidly each new super should be placed under the one partly finished; but toward the close of the season it is well to place the new super on top where the bees can use it if needed, and where they will not do much work if the honey flow should stop suddenly.



When second comb honey super is given it is placed under the partly filled one. If a third super is given it is placed below the others, but number two is put on top.

In giving supers as needed, it is sometimes necessary to tier up comb-honey supers from four to six high before the first super is finished ready to take off, but some seasons one super is sufficient for the entire crop. When supers are tiered up several high some prefer to have the one nearest completion but one super removed from the brood-chamber, the others in which less has been done being placed above it.

GLEANED BY ASKING

Geo. S. Demuth

Uniting Swarm with Weak Colony

Question.—What is the easiest and best method for uniting a swarm with a weak colony without loss from fighting?

Montana. Ira M. Alling.

Answer.—During a good honey flow a swarm may be united with a weak colony by simply dumping the swarm in front of the hive and letting the bees enter the hive of the weak colony as though it were an empty hive. However, in some cases this would result in fighting and many bees being killed. To avoid this, the swarm can be hived in an empty hive placed close beside the weak colony, then a few days later it can be united by the newspaper plan. This is done by taking off the cover of one hive, placing a sheet of newspaper over it, punching a few pinholes through the paper, then lifting the other hive from its bottom-board and setting it directly on top of the newspaper. The bees will gnaw away the paper and unite peaceably.

Bottom Starters in Sections

Question.—Will the bees attach the comb to the bottom of the section as well when a single sheet of foundation is used as when a top and bottom starter are used?

Wisconsin. C. A. Wood.

Answer.—This depends largely upon the character of the honey flow and climatic conditions, as well as upon the space between the single sheet of foundation and the bottom of the section. When a single sheet of foundation is used it should be cut so that, when fastened, there will not be more than about one-eighth of an inch between the foundation and the bottom of the section. In other words, the foundation should be so close to the bottom that the expansion and slight stretching brought about by the bees working on the foundation will cause it to touch the bottom without buckling over. It will then be fastened provided the honey flow is at all suitable for comb-honey production. During a heavy honey flow in your locality it is doubtful if sections will be filled any better when a bottom starter is used, but during a slow honey flow and in regions having cool nights, as in the inter-mountain region, bottom starters are needed for best results.

Utilizing Combs from Dead Colonies

Question.—Is it safe to give newly-hived swarms combs from colonies that starved during the winter and which contain dead larvae but no foul brood? Theo. Keinath.

Michigan.

Answer.—Yes. If you are sure that the colony did not have one of the brood diseases, it is perfectly safe to hive swarms on such combs. The dead larvae or pupae that perished because the colony starved will be carried out by the bees and the combs cleaned up.

Cutting Down Bait Combs

Question.—Is it necessary to cut down the comb in partly filled sections saved from last year to induce the bees to build them out well?

Maryland. Wm. H. Walsh.

Answer.—A much finer quality of comb honey will result if the comb is cut down so that the cells are not more than one-fourth of an inch deep. This removes that portion of the comb which is usually discolored, and at the same time gives a more nearly even surface, so that the new combs will have a better appearance. Furthermore, there is sometimes a tendency for new honey to ferment even when sealed, if stored in combs having very deep cells. This, of course, occurs only if the atmosphere is damp. There should be no old honey in these bait combs. If they were not extracted last season, they should be uncapped and given to the bees to be cleaned out before the honey flow begins.

Swarms Return to Hive

Question.—What causes a swarm to return to the hive from which it came? One of our colonies swarmed five different times, each time returning to the old hive.

Pennsylvania. Mrs. K. W. Tait.

Answer.—A swarm returns to its hive in the manner you describe because the queen is not with it. It often happens that the queen is too heavy with eggs to fly with the swarm on the first attempt to swarm, but usually on the second day following another attempt will be made which, in most cases, is successful. In the case you mention, the queen's wings may have become defective, or if you purchased this colony from some one else, the former owner may have clipped the wings of this queen. After a few unsuccessful attempts to swarm the colony usually gives up swarming until the first of the young queens emerges, which is, as a rule, about eight days after the first swarm issues. In such cases the old queen is usually killed in the meantime.

Queen-and-Drone Trap to Control Swarming

Question.—What would be the result if a queen-and-drone trap is used to catch the queen in case of a two-year-old queen and take her away, thus letting the bees return to their hive where it is to be supposed a young queen will soon emerge? Also what would happen if a one-year-old queen is shut in with an entrance-guard so she can not go out with the swarm, in all cases supplying plenty of super room? C. L. Phelps.

Nebraska.

Answer.—When the queen is caught in the trap at the time of the issuing of a prime swarm it will be necessary to destroy all queen-cells five or six days later, then again four or five days later or ten days from the time the swarm is-

sued. At this time a young laying queen should be introduced. This method will usually stop all swarming for the season. Some destroy all but one of the queen-cells, thus permitting the colony to requeen itself from one of its own cells. While this plan works well sometimes, it often happens that the colony will swarm when the young queen emerges, so it is much safer to destroy every queen-cell as described above, then introduce a young laying queen. If an entrance guard is placed over the entrance and a swarm issues, it will return unless there should be another swarm in the air at the same time having a queen. Usually on the second day another attempt to swarm will be made and perhaps again on the fourth day, but usually after two or three such attempts the bees kill the old queen and wait for one of the young queens to emerge. The first of the young queens usually emerges on the seventh or eighth day after the prime swarm issues, at which time another attempt to swarm will be made, and since the young queen can not accompany the swarm, it will return as before. This procedure may be kept up for several days, the colony becoming completely demoralized by so much swarming, until finally all of the young queens except one have been killed by the bees. Such a procedure would result in very little work being done for two weeks or more, and, the last young queen not being able to go out to mate, the colony would be left hopelessly queenless.

Bees Loaf During Honey Flow

Question.—Five of my twelve colonies worked full blast last season, while the rest of them loafed. They had filled the brood-chambers almost full of honey, so there was only about two inches of brood at the bottom of the frame, all the rest being full of honey. What should be done with them?
Pennsylvania. Oscar Lenker.

Answer.—This condition is usually brought about by the colony not being strong enough to go into the supers promptly at the beginning of the honey flow, but it may be brought about to some extent also by other conditions which prevent the expansion of the work of the colony into the supers early in the season. If the colonies are abundantly strong the condition can be broken up by making artificial swarms—that is, by shaking the bees, together with the queen, from all but one or two of the combs, shaking them into a new hive placed on the old stand. If the honey flow is good the colony then goes to work, as a rule, especially if given frames containing foundation. If given empty combs the bees may soon bring about the same condition as before. Another way to break up this condition is to use these colonies for extracted honey production. In doing this, give a second story containing empty combs and lift up some of the combs of brood from the lower story into the second story. Usually giving empty combs in this way will start such colonies at work. Of course, if they have become greatly weakened because of the reduced brood-rearing you may not be able to induce them to do much in the supers by either of these methods.

Room Needed for Brood-Rearing

Question.—Is a ten-frame standard brood-chamber large enough to keep the queens busy if congestion is avoided? A. C. Wild.
North Dakota.

Answer.—Very few queens will fill completely the combs in a standard ten-frame hive. However, since combs are seldom completely filled with brood and usually contain considerable honey and pollen, it is safer to let the queen have the run of the first extracting super during the early part of the season when the colony would be inclined to swarm. At the beginning of the main honey flow the queen can be put down into the lower chamber and confined there by means of the excluder, where she will have plenty of room for the remainder of the season.

Bees Build Combs with Raised Letters

Question.—How can I induce the bees to build combs so as to have words written on them? Rev. G. Gauvreau.
Quebec.

Answer.—You can induce bees to build combs with raised letters by sawing out the letters in a board about one-fourth of an inch thick, by means of a scroll-saw. This board can then be nailed to another and placed by the side of a frame of foundation or an empty comb in the super, using the board as a separator as used in comb-honey production. If the colony is then crowded for room when the honey flow is good, the cells opposite the sawed-out portions will be elongated so as to give the wording desired.

Cost of Building Combs

Question.—About how many pounds of honey will be lost per super if the bees are forced to build combs from full sheets of foundation instead of putting the honey into combs already built? C. H. Stinson.
California.

Answer.—Much depends upon the character of the honey flow. Under some conditions bees build combs so readily that the loss is only slight, while under other conditions they build comb so reluctantly that the colony would become crowded and loafing started early in the honey flow. Under favorable conditions for comb-building the bees will store about three-fourths as much honey when they build combs as when the empty combs are given them. Under average conditions they would store perhaps only about one-half as much when full sheets of foundation are given as when empty combs are given.

JUST NEWS
Editors

Dr. and Mrs. E. F. Phillips will sail for Switzerland, France, England, and Scotland on June 2. Beekeepers in these countries have arranged meetings at various points, and excursions into the Alps and Pyrenees have been planned by one Swiss and three French societies. They will return to the United States in September.

Mr. D. T. M. Morland, in charge of apicultural investigations at the Rothamsted Agricultural Experiment Station in England, is making a tour of the United States to obtain first-hand information concerning American beekeeping methods. He spent May 19, 20, and 21 at Medina, Ohio, where he devoted considerable time to a study of the methods of management employed in the apiaries of The A. I. Root Company.

A bulletin on honey vinegar, written by Frederick W. Fabian, has just been published by the Michigan State College of Agriculture, East Lansing, Michigan. The bulletin describes the latest method of making honey vinegar. This can probably be had by asking for Circular Bulletin No. 85, entitled "Honey Vinegar."

The President has signed the agricultural appropriation bill which includes an extra $10,000 for investigational work in bee culture. This is to be used for the establishment of a field station to be located somewhere in the inter-mountain region and which is to be devoted to experimental work in practical problems in honey production in the alfalfa and sweet clover region.

Beekeepers who will drive to Medina on September 20 for the field meetings from New Jersey, northeastern Pennsylvania, and the southern tier of counties in New York should make note of the fact that a camp has been arranged at Bell Brothers' service station, one-half mile west of Westfield, New York, on the main highway to Erie. They will there be met by Mr. Chas. McGarrell, of Westfield, who has made these arrangements as part of the New York program for the trip to Medina. Beekeepers from points east of Buffalo will camp at the grounds of Mr. Wilburt C. Wahl, Williamsville, just east of Buffalo, and will join the party at Westfield the following morning. The New York beekeepers invite their friends from Ontario to join them at the Williamsville camp. Watch for a sign about "Wahl's Honey," which no one can miss.

At the beekeepers' meeting at Sioux City, Iowa, the entire day of June 22 will be devoted to addresses and papers. The Mayor of Sioux City will give an address of welcome to the beekepers from the various states. Response will be made in behalf of the Nebraska, South Dakota, Minnesota, and Iowa associations. A noonday lunch will be served by the G. B. Lewis Company at their Sioux City branch. The papers to be presented include "Queen Rearing," by Prof. Francis Jager, of the University of Minnesota; "Beekeeping Conditions in South Dakota," by M. D. Farrar; "Disease Situation in South Dakota," by Andrew McBride; "Beekeeping in Northern South Dakota," by Grover Lothrop; 'Here and There," by Frank C. Pellett, associate editor of the American Bee Journal; "Spring Protection," by Prof. Wallace Park, Iowa Agricultural College; "What Foul Brood is Doing," by J. G. Jessup, Council Bluffs, Iowa; and "Area Clean-up," by F. B. Paddock, Iowa Agricultural College.

Contributions to the Langstroth Memorial Fund, which is to be used in establing a Langstroth memorial at the Cornell University Library, to the extent of $182.40 have already been paid in and pledges for an additional $100 have been received. Contributions which have already been paid in are as follows: Ohio State Beekeepers' Association, $105.00; Dadant & Sons, $50.00; Eastern Massachusetts Society of Beekeepers, $14.40; Miss Florence Naile, $13.00. Total, $182.40. Contributions may be sent to Miss Florence Naile, 118 West Northwood Ave., Columbus, Ohio.

Plans are being rapidly completed for the joint meeting of beekeepers from Illinois, Iowa, Minnesota, and Wisconsin, to be held in Platteville, Wisconsin, on August 17 to 20. Mr. N. E. France has made complete arrangements for a camping sight and dining facilities. The program is being arranged so that August 17 will be Wisconsin day, August 18 Minnesota day, August 19 Illinois day, and August 20 Iowa day. A special meeting for apiary inspectors, of which Dr. Fracker is to be in charge, will be called for Friday, August 20, for the purpose of studying uniform inspection laws and also to give to those visitors who are interested an opportunity to get better acquainted with the general system of apiary inspection. This chatuauqua is in honor of Mr. C. P. Dadant, editor of The American Bee Journal, August 19 being especially devoted to his honor.

BEES, MEN AND THINGS
(You may find it here)

"I am very grateful to beekeepers for the efficient collaboration which they have rendered, and which has entirely eradicated the original 'corn sugar' bill, although the substitute, in my opinion, is worse because it covers a greater amount of our basic diet."—Dr. Harvey W. Wiley, D. C.

"I lost only one colony out of 155 in wintering in the cellar. My bees are in fine condition, being strong in bees and having plenty of honey to rear brood. They now have four or five frames of brood (May 11) and are working on pussy willow. We have lots of pollen in early spring in easy reach of our yard." Thomas J. Davis, Chippewa County, Mich.

"Winter losses were heavy here due to a poor quality of winter stores (much honeydew) and a long winter. So far as the nectar-producing plants are concerned, prospects for the beekeeper are good. The only handicap, it appears, is the lack of bees."—D. Z. Swartzendruber, Washington County, Iowa.

"I have about 80 colonies left after wintering and springing. We have had a cold bad spring here. Old clover is badly killed, but the new seeding is good. We may get some honey yet."—J. L. Hooper, Jefferson County, Wisconsin.

"We had in Florida this season the largest and heaviest orange bloom ever known. This yielded plenty of nectar, but the cool weather retarded the bees. The outlook now is for one of the heaviest palmetto bloomings in years. This is truly a honey year."—R. A. Snyder, Pasco County, Florida.

"Many who depend on luck to carry them through have lost all their bees, and those who were awake to the situation have lost nearly or quite half their colonies. I think it is safe to guess that the winter losses will run at least 75 per cent. The present prospect for a honey flow from white clover is not good. But little clover is to be seen in the pastures, so that the outlook for beekeepers is not encouraging."—E. E. Cross, Roane County, W. Va.

"We are establishing a new series of out-apiaries from 55 to 68 miles from home. This is beekeeping at rather long range, and unfavorable weather has hindered considerably. Our other apiaries are off in another direction, so that it is about 95 miles from one end of the string to the other. My seventeen-year-old son and myself expect to do all the work of caring for the 750 colonies until extracting time."—J. A. Green, Mesa County, Colorado.

"After sorting over a great many combs built on foundation here in Georgia, I am more than ever convinced of the absolute necessity of having a well-wired frame as a foundation for a good comb. None of the various brands of comb foundation can be depended on to porduce uniformally good combs under average management without a well-wired frame to support it. My definition of a well-wired frame is one with strong end-bars strung with wire heavier than No. 28 (I prefer No. 25) through metal eyelets which absolutely prevent cutting into the wood. When wires have been drawn tight enough to sing you have a well-wired frame."—Morley Pettit, Telfair County, Georgia.

"I have a friend who is diabetic, and we find that he can eat honey without the injurious effects which come from eating other sweets."—S. Bell, Ripley County, Indiana.

"None of the beekeepers here intend to run for comb honey this season on account of the market's being so slow. They were compelled to sacrifice their comb honey in order to get rid of it. We have sufficient snow in the mountains to assure us all the water we need for irrigation purposes."—Mrs. E. G. Norton, Churchill County, Nevada.

"Comb honey is moving very slowly, with poor prospects ahead of selling at a good price. There will still be some old honey on hand when the new crop comes off."—I. W. Westlund, Pine County, Minnesota.

"During my short experience I have had better built-out sections of comb honey from full sheets of foundation than when a bottom-starter was added."—Miss Dora E. Gill, Peoria County, Ill.

"For ventilating comb-honey supers I drill a half-inch auger hole through the side of the super, then tack a little piece of wire screen over it. In putting in the sections I see that the follower comes next to this hole and that the spring forces the follower away from the hole so that the air can circulate. I have secured beautiful white honey in this way and have experienced no trouble in getting the bees to work in all sections. When the supers of honey are stacked away, a square of adhesive tape is pasted over the hole to seal it."—Mrs. Fannie Calvert, Chase County, Kansas.

A. I. Root's Story of His Own Life

Give diligence to present thyself approved unto God, a workman that needeth not to be ashamed, handling aright the word of truth.—II Timothy 2:15.

In 1873 it occurred to me that comb-honey sections might be made of thin white wood veneer, the frames being formed by folding up strips about 1¼ or 1½ inches wide, these frames to be of such a size that four or six would fill a large frame. When these were filled with honey and sealed up they could be removed and sold singly or in boxes. As the frames could be made cheaply, they could be sold with the honey.

Sectional Honey-Boxes

In March, 1875, a sample of Barker & Dicer's sectional honey-box was sent to me. These boxes were put together like the Crandall building blocks. They were very neat and I thought at the time would probably enable the dealer to retail his honey at a high price on account of the attractiveness of the box. I could not help but feel that paying for these fancy boxes by the pound would be a great tax on the consumer, for in discussing the merits of extracted honey or box honey with Adam Grimm he replied in answer to my remark that the boxes were expensive, "The boxes cost me nothing, for I receive the same price for them per pound as for honey."*

In December, 1875, with the help of some ideas from C. R. Carlett and from Mr. Moore of Binghamton, N. Y., I designed some comb-honey section boxes especially for the Simplicity and Standard hives. Each super held 48 of the sections, 5¼ x 5¾, holding from one to two pounds each. Each super contained two tiers of sections which were supported on folded tin.

These sections were of the four-piece type, the corners being nailed together. In the top of each was a saw kerf designed to hold a starter of comb foundation exactly in the center of each frame or section. The foundation could be put in rapidly, for after a strip was pushed through we had only to run a hot iron over the top to make the starter a fixture.

Four-Piece Sections Without Nails

On February 28, 1876, I made a new invention in section boxes for holding comb foundation. From a ⅞ board I cut off pieces five inches long and grooved both ends of the pieces by pushing them over four saws placed on such an angle that they produced four grooves and four tongues of equal thickness, and $\frac{3}{16}$ of an inch deep. Then I ripped off $\frac{3}{16}$ strips from these pieces, each one of course having the tongues and grooves in the end. Four of them would make a frame without nails. However, it was too narrow and had no place in which to fasten the foundation. Therefore I decided to use two of the pieces for both top and bottom, placing them side by side so there was left between them just the space for a starter of foundation or a whole sheet, as desired. I timed myself by a watch, and after the groove was done I could make a section box with a foot-power saw in just half a minute.

In 1875 I made the remark that section boxes should be made and sold for a cent each. When in Michigan Mr. Palmer told me that those he made did not cost him as much as that. On the strength of this I advertised to furnish them for that amount and afterward found I had an elephant on my hands. In March, 1876, I began studying section boxes. I studied by day and dreamed by night. I sent for sample honey boxes from every point of the compass, paying express charges on them and then many times piled them into the kindling box as soon as I had looked them over. In fact, so accustomed were Mrs. Root and "Blue Eyes" to see me bring home some new-fangled honey box when I came to dinner that they came to look for and admire them as a matter of course, and rejoiced with me over each improvement in price and construction. Sometimes it seemed absolutely impossible to make wood, metal, and glass come into the proper place cheaply and still hold together strongly; but just as I would be ready to give up, some short cut would show itself, or the capability of some machinery heretofore unthought of would unveil itself with a flash. At any rate, I could not give it up even if it did almost make me ill.

In the fall of 1876 I was told that the city of Cleveland was overstocked with nice honey in boxes, but that not enough could be obtained in the small sections.

*Since the passage of the Pure Food Law the weight of the box must be deducted from the gross weight in all honey shipped in interstate commerce.—Editor.

One dealer remarked that if some of them contained only three-quarters of a pound all the better, for there was always some one who wanted the cheapest sections.

Double-Tier Section-Holder

Later on I discovered that eight sections 4¼ inches square would just fit inside a Langstroth frame, but since, for several reasons, a common frame was not a good thing to hold sections, principally because the bees would cover the exposed portion with wax and propolis, I made a frame with top and ends two inches wide and with a bottom-bar 1¾ inches wide. I used material about ⅞ of an inch thick all around. These frames filled with sections could be used entirely in the top story of the hive, or one could be put on each side in the lower story, thus securing the advantages of side storing without any fuss or bother.

By 1877 I had decided that a section box 4¼ inches square by about 2 inches thick, weighing about one pound, would take the precedence over all others. I tried sections still smaller, but the bees seemed loath to put honey into anything very much smaller. I had some sections 2½ inches square that were filled well, but it was only after the bees had filled all the larger sections in the hive. In 1882 half-pound sections were asked for. I made them and used them, and had honey stored in them; but I felt it would not pay unless almost as much could be secured for half-pound sections as for the pound size, as the bees were so loath to use such very small receptacles.

The One-Piece Section

In the February number of Gleanings for 1879 I described a new section, the one-piece section brought out by Lewis & Parks. Their one-piece section was most decidedly a neat and finished job. I had made a few sections on nearly the same plan three years before this, but discarded the plan as being too much work. One difficulty was to get the V-shaped groove across the material at just the right point and just far enough through to have it bend nicely, with the dovetailing in the end cut so accurately that the ends had to be driven together with a mallet. But when completed, the result was a strong box without a nail in it.

New Way to Secure Comb Honey

I tried the experiment of producing honey in large combs, trimming it to fit the section boxes and after it had ceased dripping, putting it in the hives for the bees to fasten and seal up in proper shape for market. The great difficulty, however, was in getting comb honey of a regular thickness to produce nice-looking sections, and even when I succeeded in this I found it a slow and dauby business and finally concluded that it was cheaper to let the bees do it right in the first place than to have so much honey running about. Years before I had said that, if a plan could be devised for dividing up large sheets of comb honey into nice little squares without drip or waste, beekeepers could afford to pay thousands of dollars for such a process.

Comb-Honey Shipping-Case

In some of my original price lists I advised using Simplicity hives for shipping-cases; but, although these were perhaps as cheap and strong as any box that could have been made for the purpose, they were not exactly what was wanted. The honey was not visible, and therefore there was danger of breakage in transit.

To determine what size of package would be best, I sent to a manufacturer of fruit and berry crates and secured a strong, light, and cheaply made crate with convenient handles for lifting. From this I decided that I wanted a package that would hold two tiers of sections, four sections long just as they stand in the hive, and six wide. This would hold in all, therefore, forty-eight sections, weighing nearly a pound each. I designed the case in such a way as to permit the glass to slide in from both front and back, each end of the end boards being rabbetted enough to receive the glass by means of a single saw cut. Strips of ⅜ material 1½ wide were put across above and below the glass and nailed into the bottom to give additional strength.

I admired my first shipping-case so much before putting the honey in it that I anticipated an additional surprise when it was painted a pure white, but I was somewhat astonished to find that the honey looked several shades darker by reason of the strong contrast. The white paint soiled too easily any way.

There were so many newspaper statements to the effect that the comb honey on the market was made by machinery, and that neither the comb nor the contents ever came from a beehive, that in Gleanings for November 1, 1885, page 738, I offered $1000 to anyone who would tell me where such spurious comb honey was made. Later on I had this offer printed on a card for distribution. No one ever gave me this information, neither has one ounce of manufactured comb honey been forthcoming. It is a mechanical impossibility and will remain so.

Beekeepers! A New Market for Your Beeswax

Send samples of your stocks to us. We are ready to submit offerings on any quantities. We will pay cash upon receipt of shipments.

S. C. Johnson & Son, Racine, Wis.

Attention: R. P. Gardiner.

Classified Advertisements

Notices will be inserted in the classified columns for 7c per word. You must say you want your advertisement in the classified columns, or we will not be responsible for errors For special conditions on bee and queen advertising please write us. Copy should be received by 15th of preceding month to insure insertion. Cash with copy if credit has not been established previously.

REGULAR ADVERTISERS DISCONTINUED IN GOOD STANDING

(Temporary advertisers and advertisers of small lots, when discontinued, are not here listed. It is only regular advertisers of regular lines who are here listed when their advertisements are discontinued when they are in good standing.)

F. M. Babcock, C. N. Ballard, O. W. Bedell, Berlin Fruit Box Co., L. J. Bond, Blue Bonnett Apiaries, Central Louisiana Apiaries, Jes Dalton, H. E. Graham, Charles Guhl, Lewis O. Klaty, F. A. Lockhart & Co., Mayeux Bee Co., L. C. Mayeux, F. M. Morgan, New England Apiaries, W. M. Peacock, Wm. Robinson, N. L. Stapleton, Baughn Stone, C. S. Watts, V. L. Watts, John A. Williams, Edw. A. Winkler, Rainbow Apiaries.

HONEY AND WAX FOR SALE

FOR SALE—Extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

WHITE clover honey in 60-lb. cans. None finer. J. F. Moore, Tiffin, Ohio.

FOR SALE—Buckwheat honey in 60-pound cans, 8½c. Robert Conn, Roaring Branch, Pa.

HONEY for sale, any kind, any quantity. The John G. Paton Co., 217 Broadway, New York City.

FOR SALE—Comb honey at reduced prices. Write stating your wants. H. G. Quirin, Bellevue, Ohio.

COMB HONEY—Vermont clover of the finest quality in any quantity. J. E. Crane & Son, Middlebury, Vt.

EXTRACTED HONEY FOR SALE—Clover, buckwheat, any kind of package. C. J. Baldridge, Kendaia, N. Y.

WHITE clover honey, one to five cases, 11c; 5 cases or more, 10½c. Sample, 20c. Hoehn & Honigford, Ottoville, Ohio.

FOR SALE—Extracted, comb, and chunk honey. Prices on request. Sample 15c. F. W. Summerfield, Waterville, Ohio.

FOR SALE—Pure extracted honey, a fine grade of buckwheat honey in 60-lb. cans at 8c a pound. Gilbert J. Sergeant, Sodus, N. Y.

CHOICE lots of clover honey still in hands of producers. Excellent quality. Few bargain lots. The A. I. Root Co. of Iowa, Council Bluffs, Iowa.

FOR SALE—Choice white and light amber Michigan extracted honey in NEW 60-lb. cans, case or carload. Sample, 15c. David Running, Filion, Mich.

GOLDENROD and buckwheat comb honey in 4¼ beeway sections for sale at reasonable prices. Quality very good. H. E. Crowther, Jefferson, Ohio.

FOR SALE—Carload Michigan light extracted honey, 10c per lb.; also 80 cases light amber at 8c per lb., 120 lbs. per case. L. S. Griggs, 711 Avon St., Flint, Mich.

FOR SALE—Delicious amber honey, buckwheat and clover mixed. Put up in 60-lb. cans, $5.00 per can; $9.60 per case of two, f. o. b. Adams & Myers, Ransomville, N. Y.

CLOVER honey in 60-pound cans. Wm. Oliver, Wayne, Nebr.

FOR SALE—Comb and extracted white clover honey. Prices on request. Dr. E. Kohn & Son, Grover Hill, Ohio.

HONEY FOR SALE in 60-lb. tins: Crystallized clover, 12c a lb.; California thistle, 12c; buckwheat, 8c. If wanted liquid, add 1c per pound. Hoffman & Hauck, Inc., Ozone Park, N. Y.

WE still have a few cases of light amber extracted honey in new cans and cases that we are closing out to make room for the new crop, at only $10.00 per case of two cans. Address E. D. Townsend & Sons, Northstar, Michigan.

HONEY FOR SALE—For the beekeepers whose supply may be short, we have the choicest extra quality sweet clover, fine white clover, alfalfa, and some mesquite that we can offer our friend honey-sellers who may be short. Write for prices. The A. I. Root Co., Medina, Ohio.

FOR SALE—Several very choice lots comb honey at $4.50 to $5.25 per case. Also fine lots sweet clover, white clover, buckwheat, and light amber extracted in 60-lb. cans. Beekeepers who need more honey for their trade and solicitors should write us. A. I. Root Co. of Chicago, 230 W. Huron St., Chicago, Ill.

HONEY AND WAX WANTED

WANTED—Fancy white clover comb. No granulation. Quote, freight prepaid. E. W. Peirce, 345 Cliffwood Ave., Zanesville, Ohio.

BEESWAX WANTED — Highest market prices paid. Cash or in exchange for supplies. Write us for quotation before shipping elsewhere. The A. I. Root Co., Medina, Ohio.

WANTED—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5c a pound for wax rendered. The Fred W. Muth Co., Pearl and Walnut Sts., Cincinnati, Ohio.

BEESWAX WANTED—We are now paying very high prices for beeswax, both cash and trade. Write us for quotations and we will be very glad to quote you f. o. b. Hamilton or f. o. b. your shipping point. Dadant & Sons, Hamilton, Ill.

FOR SALE

HONEY LABELS—New design. Catalog free. Eastern Label Co., Clintonville, Conn.

MAKE queen introduction SURE. ONE SAFIN cage by mail, 25c; five for $1.00. Allen Latham, Norwichtown, Conn.

FOR SALE—25 10-frame hives with drawn combs, also lot of 4¼x4¼ supers and two-frame extractors. Westerman Bros., Bremen, Ohio.

FOR SALE—Good second-hand 60-lb. cans, 2 to a case, 30c case. Novice extractor, never uncrated, $18.00. I. J. Stringham, Glen Cove, N. Y.

TO Canadian beekeepers: Standard equipment ready for shipment. Write for price list. The Ontario Beekeepers' Supply House, Guelph, Ont.

FOR SALE—Bee paraphernalia, from feeders to complete hive-bodies. They are in good condition. E. D. Hansen, 308 N. Prospect Ave., Park Ridge, Ill.

FOR SALE—New Modified Dadant hives, standard 10-frame hives with drawn combs, shallow supers, mating hives, quadruple winter cases and other used equipment. All clean and free from disease. A. E. Crandall, Berlin, Conn.

FOR SALE—200 empty 5-gal. cans and cases like new, 20c for 2 cans and case. H. J. Volk, 222 Center Market, Newark, N. J.

FOR SALE—¾-inch Root honey pump. No fittings. Good working order. Pumped over 25 tons honey last year. $12.00. R. V. Cox, Sloansville, N. Y.

ROBINSON'S comb foundation will please the bees, and the price will please the beekeeper. Wax worked at lowest rates. E. S. Robinson, Mayville, N. Y.

HONEY LABELS—Attractive and original, made especially for your business. Lowest prices. Catalog FREE. Liberty Company, Station D, Box 4186, Cleveland, Ohio.

AS I am changing from standard to shallow extracting supers, I will sell 300 standard extracting combs. All combs are well wired and built to the bottom-bar. Guaranteed free from disease. Price, 30c each. Noah Bordner, Holgate, Ohio.

FOR SALE—Good second-hand 60-lb. cans, two cans to a case boxed. We have large stocks of these on hand. Please write for prices if interested. We are offering only good cans and good cases. C. H. W. Weber & Co., Cincinnati, Ohio.

BEES AND QUEENS

WHOLE colonies of bees, if advertised for sale in these columns, must either be guaranteed free from disease, or, if not so guaranteed, the exact condition of the bees and the conditions of sale must be clearly stated in the advertisement; or, it will be satisfactory if the advertiser will agree to furnish a certificate of health from some authorized bee inspector at time of sale.

JUNE QUEENS, 60c each. See my display ad this issue. D. W. Howell, Shellman, Ga.

ALL SOLD OUT on package bees. The Spencer Bee Farms, Orleans Parkway, R. F. D. 2, New Orleans, La.

FOR SALE—75 colonies bees and equipment. Best offer. Will furnish certificate. Carrington Callaway, Norwood, Va.

LEATHER-COLORED Italian queens, $2.00 until June 1; after, $1.00; tested, $2.00. A. W. Yates, 15 Chapman St., Hartford, Conn.

BEES FREE DELIVERY and prompt service. See advertisement on page 419 for prices, etc. The Citronelle Apiaries, Citronelle, Ala.

FOR SALE—Italian queens ready May 15. One queen, $1.00; 6 queens, $5.50; 12 queens, $10.00. W. W. Talley, R. F. D. No 4, Greenville, Ala.

GOLDEN Italian queens, 1, $1.00; 6, $5.00; 12, $10.00; $75.00 per 100. Write for price on package bees. T. J. Talley, R. F. D. No 3, Greenville, Ala.

GOLDEN ITALIAN queens, producing large beautiful bees, solid yellow to tip. Package bees, nuclei circular, 1926, ready free. Dr. White Bee Co., Sandia, Texas.

BARGAINS—Must sell at once 15 colonies Italian bees, guaranteed free from disease. Equipment in good condition. John Shire, foot of Schumann-Heink Hill, Singac, N. J.

EARLY package bees, select three-banded Italian queens. Most northern breeder in California. It's an exclusive business with me, not a sideline. J. E. Wing, Cottonwood, Calif.

YOU want good queens; try mine. Cells are fed and developed in full colonies. No poorly nourished queens. Golden breeders used. 1 to 9 $1.00; 10 to 25, 90c. M. Stevenson, Westwago, La.

THE best three-band Italian queens by return mail. See ad on page 413. J. M. Cutts & Son.

BRIGHT three-band Italian queens with special introducing cages. Let's introduce 'em right this year. Write for circular and price list. J. F. Diemer, R. F. D. No. 3, Liberty, Mo.

IMPORTED three-banded Italian queens. Very gentle and wonderful honey-getters. 1, $1.00; 6, $5.00; 12, $10.00; 100, $75.00. Safe arrival and satisfaction guaranteed. G. E. Whittle, Mussel, Ala.

BOOKED TO CAPACITY until May 20. Two-pound packages with queens shipped between May 20 and June 10, $3.00 each, any number. The Crowville Apiaries, J. J. Scott, Prop., Crowville, La.

FOR SALE—Three-banded Italian queens after May 20, $1.00 each; 6 for $5.50; 12 for $10.00. Tested queens, $2.00 each. Safe arrival and satisfaction guaranteed. Robt. B. Spicer, Wharton, N. J.

C. W. PHELPS & SON are still producing the famous Phelps Golden Queens. PROLIFIC, GENTLE and very BEAUTIFUL, $2.00 each; 6 for $10.00; $18.00 a doz. C. W. Phelps & Binghamton, N. Y.

GOLDEN ITALIAN queens for sale, 1, $1.00; 6, $5.00; 12, $10.00; 100, $75.00. Package bees in season, 20 per cent to book your order for spring delivery. J. F. Rogers, Greenville, R. F. D. No. 3, Ala.

LATHAM'S "She-suits-me" untested 3-banders, $2.00 per queen from May 15 to June 5. After June 5, $1.00 each. Packages and nuclei. Introduction insured. Send for circular. Allen Latham, Norwichtown, Conn.

HOLLOPETER'S "Bred for business" untested Italian queens, light three-banded stock, ready June 1, $1.00 each. Write for circular. J. B. Hollopeter, Rockton, Pa. Commercial queen-breeder continuous from 1911.

AGAIN our northern-bred leather-colored Italian bees have wintered fine, and we guarantee that no disease exists in our yards. Queens after June 15, $1.25 each; $12.00 per doz. Charles Stewart, Johnstown, N. Y.

WANTED—To sell 50 swarms of bees near Chicago and its market, with combs for extracting. Inspector's guarantee against disease. Wintered well. $500.00 takes the yard. Mrs. Jennie Walker, 6002 W. 28th St., Cicero, Ill.

FOR SALE—50 colonies of Italian and hybrid bees in 10-frame hives. Certificate of inspection furnished. Root steam honey knife and boiler. Root frame-nailing device. Comb and extracting supers. K. R. Fuller, Marengo, Ohio.

PURE ITALIAN QUEENS — Untested, $1.00; tested, $1.50; 2-lb. package, $3.00. Add price of queen wanted. Safe arrival guaranteed after May 10. Write for prices on colonies. Birdie M. Hartle, 924 Pleasant St., Reynoldsville, Pa.

HAVE you tried the famous Carolina queens? If not, write for circular. Untested, 1 to 10, $1.00; 10 to 24, 85c; 25 to 50, 75c; select untested, $1.25; select tested, $2.25; tested, $2.00. Carolina Bee Co., W. O. Curtis, Mgr., Graham, N. C.

GOLDEN Italian queens, untested, 1 to 5, $1.00 each; 6 to 11, 90c each; 12 or more, 80c each; tested, $1.50; select tested, $2.50 each. No disease. Safe arrival and satisfaction guaranteed. 20 years a breeder. D. T. Gaster, R. F. D. No. 2, Randleman, N. C.

37 COLONIES Golden Italians, fine condition, all new 10-frame Root hives. State inspected. Guaranteed free from disease. Lots of honey. Located near Boyne City, Mich. Reason for selling am locating in Atlanta, Ga. H. W. Phinney, 255 The Prado, Atlanta, Ga.

$1.00 QUALITY QUEENS. None better at any price. Superior quality three-banded Italians. Take no chances. Buy reliable queens with a reputation. Latest prices, $1.00 each; 6, $5.00; 12, $10.00. Satisfaction guaranteed, prompt service. G. H. Merrill, Piedmont, S. C.

BOOKING orders for high-grade three-banded Italian bees and queens. 2-lb. pkg., $4.50, discount on quantity. Select untested queen, $1.00; $10.00 per dozen; select tested queen, $1.50. Inspector's certificate with each. J. Allen, Catherine, Ala.

GOLDEN Italian queens, untested, $1.00 each; 6 for $5.40; 12 for $9.60; tested, $1.50; select tested, $2.50. Three-banded Italian queens, $1.10 each; 6 for $6.00; 12 for $10.80. No disease, safe arrival and satisfaction guaranteed. Sam Hinshaw, Randleman, N. C.

I am now filling orders for Golden Italian Queens that are bred for business and gentleness, as well as good color. State inspected, delivered safe. Satisfied customers everywhere. Untested, $1.05 each; 6 for $5.50; 12 or more, 80c each. Hazel V. Bonkemeyer, R. F. D. No. 2, Randleman, N. C.

QUEEN bees now ready to ship. Let your orders come on for them. $1.00 each; $10.00 per dozen; 1 pound bees with queen, $3.00; 2 pounds bees with queen, $4.75. We pay charges to your postoffice. Let us have a trial order. We will please you. Graydon Bros., Greenville, R. F. D. 4, Ala.

BUY ITALIAN bees from shipper farthest north Get hardy stock and save expressage. Satisfaction guaranteed. 20 years' experience. Three-frame nuclei and tested queen, $5.00; select tested, $6.00. Orders booked for spring delivery by S. G. Crocker, Jr., Roland Park, Baltimore, Md.

FOR SALE—Golden Italian queens, 1 untested queen, $1.00, ready about May 20; 1 tested queen, $2.00, ready about June 20. These queens are fine ones and will please. When orders can not be filled in six days, money returned unless ctherwise ordered. J. F. Michael, Winchester, R. F. D. No. 1, Ind.

1000 SCOTT QUEENS! In addition to the queens we use in our own yards we will raise 1000 of the same grade for our customers. We rear our own queens because they suit us better than any we have been able to buy. We raise honey-getters that are of good color and not cross. Ready about June 5. $1.00 each, or $10.00 per dozen. The Scott Apiaries, La Grange, Ind.

FOR SALE—Choice bright Italian queens. I have been building up this strain for the last 22 years for vigorous hustlers, good winterers, gentleness and fine color. These queens will equal the best on the market. Health certificate goes with the queens. Prices: 1 untested queen, $1.25; 12 untested queens, $12.00; 1 breeder, $10.00. Emil W. Gutekunst, Colden, N. Y.

HOW DO YOU DO? Yes, sir, I am a beekeeper and queen-breeder in the midst of my sixteenth successful season. If strong hustling colonies that produce big honey crops is what you want, then head your colonies with my select untested queens. We ship only the best quality, and make our guarantee good. Look up my ad on page 403. P. M. Williams. Ft. Deposit, Ala.

The following have been bonded as breeders of queens and package bees until January 1, 1927: J. F. Diemer, Liberty, Mo.; C. B. Bankston, Buffalo, Texas; T. W. Burleson, Waxahachie, Texas; Emil W. Gutekunst, Colden, N. Y.; J. G. Puett & Sons, Moultrie, Ga.; J. J. Scott, Crowville, La.; Jasper Knight, Hayneville, Ala. Surety Department of the American Honey Producers' League. Colin P. Campbell. Attorney-in-Fact, Grand Rapids, Mich.

FOR SALE—300 colonies of bees, guaranteed free from disease. Hives enough to make 400 colonies. Good orange section, also other honeys. Never had a crop failure. Will take $2000 for bees and equipment. Cassia Apiaries, Cassia, Florida.

FOR SALE—About 90 colonies Italian bees in Root standard 10-frame hives, and all supers for extracted and comb honey, 4-frame Root automatic extractor, and complete outfit. Certificate of inspection furnished at time of sale. For more information, write George Eickman, R. F. D. No. 2, Appleton, Wis.

BRIGHT AMERICAN BEAUTY ITALIAN QUEENS AND BEES. April delivery, 2-lb. combless with untested queen, sugar syrup feed, $4.00 each; 5 or more, $3.85. SPECIAL 2-lb. bees, frame emerging brood, queen introduced and laying, $4.75; 5 or more, $4.65. Queens, $1.25 each. Write for quantity prices on bees and queens. State health certificate. Satisfaction and safe arrival guaranteed. Tupelo Apiaries, Apalachicola, Fla., J. L. Morgan, Prop.

ATTENTION, NORTHERN HONEY PRODUCERS—ST. ROMAIN QUALITY BEES ready for 1926 season. I am in position to furnish several carloads of nuclei and pound packages at a very reasonable price. Shipping season starts April 1, 1926, and all bees are absolutely free from disease. I furnish health certificate with each shipment, also guarantee safe arrival all over U. S. All bees shipped on comb of emerging brood and honey for feed in transit, also combless packages if desired. Prices as follows: 1 2-lb. pkg. with queen, $3.00; 1 3-lb. pkg. with queen, $4.00; 1 4-lb. pkg. with queen, $5.00. Large orders will be given special attention. Address John St. Romain, Marksville, La.

HELP WANTED

WANTED—Experienced beekeeper. Share basis. M. E. Utter, No. 75, Amity, Orange Co., N. Y.

TWO rugged young men for extracting season in July. 13 yards, central power plant. Ray Wilcox, Odessa, N. Y.

WANTED—Experienced man through July, August, September to extract and work bees. E Sires, Stanfield, Oregon.

SITUATION WANTED

BEEKEEPER'S HELPER. Refined young man (23), learner, loyal, reliable, desires position in New York State. Can drive car. Very reasonable wages asked. Leon Archambault, 1723 Pleasant, Fall River, Mass.

ROOT EXTRACTOR EXCHANGE COLUMN

(A free advertising service to Root customers who wish to dispose of their present extractors as they are purchasing Root machines of greater capacity.)

FOR SALE—Root 8-frame power extractor, 9⅝-in. pockets, friction drive. Is in good condition. Only three years old. L. M. Hubbard, Onsted, Michigan.

MISCELLANEOUS

THE BEE WORLD—The leading bee journal in Britain and the only international beereview in existence. It is read, re-read, and treasured. Will it not appeal to you? Specimen copy free from the publishers. Send us a postcard today. It is well worth your little trouble. The Apis Club, Benson, Oxon, England.

TOO LATE TO CLASSIFY

100 new 7-wire queen-excluders. Van's Honey Farms, Hebron, Indiana.

FOR SALE—Light amber clover honey in 60-lb. cans. Priced right. A. A. Beals, Oto, Ia.

WANTED—Comb and extracted. J. E. Harris. Box 178, Morristown, Tenn.

BUCKWHEAT extracted honey, $10.00 per 120-lb. case. J. G. Burtis, Marietta, N. Y.

NOTICE—Booked up on package bees. Honey Girl's Queens, untested at 70c; $65.00 per 100. T. A. Planche, Hamburg, La.

SEASONABLY reared, high-class Italian queens at popular prices. Write for circular. R. V. Stearns, Brady, Texas.

MY queens prove to be queens of quality and still they cost you no more. Write for prices. R. V. Stearns, Brady, Texas.

RASPBERRY HONEY put up in new 60-lb. cans, two cans in a case, for 12½c a lb. Sample for 15c. Elmer Hutchinson & Son, Lake City, Mich.

FOR SALE—Part or all of 43 colonies of bees. Just inspected and disease free. Hives in first-class shape. Price $7.00. Ira Quady, Rockford, Minn.

FOR SALE—50 to 100 colonies of bees, some black, some Italian, in lots to suit purchaser, at $12.00 per colony. Guaranteed free of disease and with inspection certificate. L. L. Ferebee, Okatie, S. C.

WANTED—Experienced beekeeper and queen breeder, age 25 to 35, for 1500 colony (extracted honey) plant. Season September to March. Give full particulars, stating wages with board provided. Piako Honey, Inc., Waihou, New Zealand.

GOLDEN ITALIAN QUEENS and BEES—1, $1.00; 6, $5.00; 12, $10.00; 100, $75.00. Package bees, 1 lb., $2.75; 2 lbs., $4.75 with queen; 10 or more, $4.50. They work for nothing and board themselves. Sam Foley, Greenville, R. F. D. No. 3, Ala.

Westchester County, New York, Beekeepers! For sale, 5 Root Standard 10-frame hives, three with drawn comb and full foundation, 7 supers, and other supplies. No disease. Splendid outfit for beginners. G. B. Carpenter, 2 Bradley St., Mamaroneck, New York.

GOLDEN ITALIAN QUEENS for 1926, the big bright, hustling kind (the kind that gets the honey). Satisfied customers everywhere. Untested, $1.00 each; 6, $5.00; 12, $10.00. $75.00 per 100. Tested, $2.00 each. Safe arrival guaranteed. E. F. Day, Honoraville, Alabama.

Stanley J. Crochet, near Loreauville, La., was my queen-breeder for two years. He has gone into the queen-rearing business for himself this season and has asked me to do his selling for him. He will offer untested Shaw strain of queens only this season and he will furnish them for $1.00 each or $10.00 per dozen. Address me at my summer address, Northstar, Michigan, and the queens will be mailed direct from Loreauville to you. E. D. Townsend.

FOR SALE—43 spring count colonies of bees, guaranteed free from disease, descendants of Root queens. Hundreds of old hives and supers, etc., extra. Root hand extractor in good order, and eight months' free use of rock-chimneyed house, and houses for honey and hives, wood, water, garden and chicken and cow range, stands, foundation, and 5 square miles of owned mountain and valley bee range. Location, 25 miles north of Birmingham, Ala. Bee Line Highway passes through the property. Delightful climate. No mosquitoes. All for $1000 cash. E. J. Bryan, Warrior, Alabama.

Honey Selling Helps

That Make the Public Buy

ATTRACTIVE LABELS
28 different designs.

NEW COMB HONEY CARTONS
4¼x1½, 4¼x1⅞, and 4x5x1⅞ sections.

HONEY LEAFLETS IN COLORS
Worth-while selling helps.

METAL "HONEY FOR SALE" SIGNS
Heavy baked enamel sheet iron sign, 14x18 inches, yellow and black.

COUNTER DISPLAY CASES
For roadside stand or grocery store.

LITHOGRAPHED CONTAINERS
2½, 5, and 10 pounds.

TALL CLEAR WHITE GLASSWARE
8, 16, 32, and 48 ounce size.

PLAIN TIN CONTAINER
2½, 5, 10, and 60 pounds.

"HONEY AS A FOOD" BOOKLET
16 pages of valuable information.

Write for Our Special 1926 Prices

The A. I. Root Co.
Medina, Ohio.

Be sure to take advantage our our special offer of a set of honey signs on page 400.

Queens! Queens! Queens!

After thirty years of select breeding our Italian strain of three-banded bees, we have one that is unparalleled or unsurpassed for disease-resisting qualities and honey production. Among the breeding queens we have for 1926 is one from Manitoba, Can. This queen, "Mrs. Manitoba Wright," has an authentic record of 646½ pounds surplus honey and one increase from spring count for 1925; 25 pounds one day. All queens reared by us are from mothers having wonderful records. Write for 1926 circular and price list. Booking orders now.

Berry's reliable three-banded Italian queens now ready for shipment by return mail. Save that queenless colony. All our queens reared from great record-breakers and makers.

Untested, $1.00 each, lots one dozen 90c each. We guarantee prompt shipment and that all queens will arrive in perfect condition.

M. C. Berry & Co.

BOX 697. MONTGOMERY, ALA.

"Make Your Honey Famous"

"Dress your honey in a good looking A glass jar, and it will become the Famous Package of your Neigborhood."

THE A. I. ROOT COMPANY, Medina, Ohio.
HOFFMAN & HAUCK, Inc., Ozone Park, N. Y.
A. G. WOODMAN COMPANY, Grand Rapids, Mich.
THE A. I. ROOT COMPANY, Leonia, New Jersey
A. I. ROOT COMPANY OF IOWA, Council Bluffs, Iowa.
A. I. ROOT COMPANY OF ST. PAUL, St. Paul, Minn.
A. I. ROOT COMPANY of SYRACUSE, Syracuse, N. Y.
M. H. HUNT & SON, Lansing, Michigan
A. I. ROOT COMPANY OF CHICAGO, Chicago, Illinois

Hazel-Atlas Glass Company

Wheeling, West Virginia

Patents Pat. Counsel of The A. I Root Co
Practice in Patent Office and Court.
CHAS. J. WILLIAMSON,
McLachlan Bldg., Washington, D.C.

HONEY PAILS
MANUFACTURERS OF
"BLOSSOM-SWEET"
AND
BADGER BRAND
5 and 10 lb. Honey Pails.
We specialize in 5 and 10 lb. round pails and 60 lb. square cans. Plain and Lithographed cans of all descriptions.
WILKES-BARRE CAN CO.
ESTABLISHED 1856
WILKES-BARRE, PENNA.

SOUR HONEY DEPT.

It's done and I know as how I have triumphed. No doubt about it atall in my mind and Ab's, but Demuth and Jack Deyell are so jellous and skeptic they say it aint so. But it is. They can't bear to see credit go to nobody else no more than old Doc Phillips can and that's all that's ailin 'em. The Triumph strain of winter-hunger resistants is established now firm and sound on to the whole world.

I got to allow tho as how I'll be some delayed, but not more'n a year, in sendin out Triumph queens to Carr and Doc Needham and Jes Dalton and Jay Smith and Kelty and Ab and poet Laird of Iowa and my trade, and Geo. Rea, too. So I will explain a little why I can't furnish no queens immediate. It's a little matter as what time and experince will remedy. Nothin is perfect especially at first generly and Rome warnt made in no one day so she warnt. Just remember that, all you beekeepin smart Alecs as are ready allays to pile onto me or poor old Doc Hutzelman or Al. Latham or any other truly forrard lookin beekeeper of all time and ages.

Now to explain the little delay in sendin out Triumph queens. April 24

(Continued on page 399.)

WHAT IS BANKING BY MAIL?
4% BANKING BY MAIL
It is a simple system for opening an account with this Bank and making deposits or withdrawals BY MAIL instead of coming to the bank. This plan makes the nearest mailbox a convenient bank for you. Write today for details.
THE HOME OF THE HONEY BEE
THE SAVINGS DEPOSIT BANK CO. MEDINA OHIO.
E. B. SPITZER, PRES. E. R. ROOT, VICE PRES. H. E. AYLARD, CASHIER

First Quality Products
--- No Seconds ---
Last month we called your attention to our very low prices on Hives, Supers, and Sections. We offer equally attractive prices on all our other supplies. **Here are some more:**
Brood Frames, 10-frame Hoffman.....$5.75 per 100
Extracting Frames, 10-frame shallow.... 3.95 per 100
SHIPPING CASES
Falcon Quality Products
HONEY CONTAINERS
W. T. FALCONER MFG. CO., Dept. 10, Falconer, N. Y.

SOUR HONEY DEPARTMENT

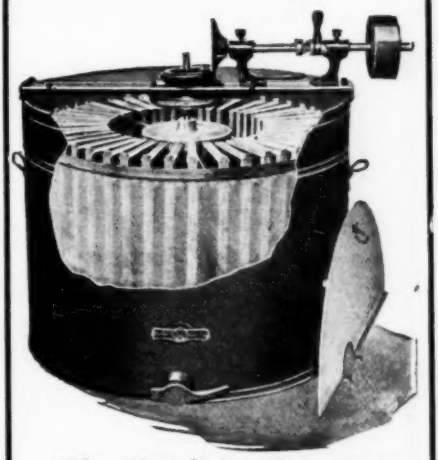
(Continued from page 398.)

was warm and fine and the rheumatiz into Ab's feet too bad for him to only get to the top of my backyard fence and not to the creek. It bein so fine and warm I had inflooenzy and couldn't work in the lumber yard. So the great time had come to open up my Triumph resistants with Ab as offishul witness. I noticed they hadn't been flyin none so I didn't really press Demuth and Jack Deyell much to come over as witnesses along with Ab. But their not flyin didn't worry me none for the Triumph strain has complete winter quiessants anyhow as should last over into the spring.

It was exactly 1:32 p. m., eastern time, April 23, as when Ab says I took off the first epic makin cornstalk and it was exactly 1:52:37 p. m. eastern time as I finished up takin off the lastmost historic cornstalk off my second and last hive. Ab says, "think as how this scene will be commemorized." "Yes," says I, "let's paws, Ab, just afore I raise the hive cover and mortal men's eyes first see winter-hunger resistant bees actuel and real. Five minutes from now Langstroth won't have nothin on me as for wide reputashon, and your name, too, Ab, will go down as bein one of two present on this occashun. Then when we get our world wide Triumph queen busi-

(Continued on page 401.)

At Indianapolis



The Simplicity Extractor On Exhibit

The A. I. Root Company

873 MASSACHUSETTS AVE.

JUNE QUEENS, 60c EACH

Untested, one grade, 1 to 24, 75c each; 24 to 49, 65c each; 50 or more, 60c each. Tested, $1.50 each. Extra-select tested, $3.00 each.

Carefully raised from good breeders.

D. W. Howell, Shellman, Ga.

THREE-BANDED ITALIAN QUEENS

One, $1.00; 6, $5.00; 12, $9.50; 100, $75.00. For quality, service, everything guaranteed, try **TAYLOR APIARIES, LOCK BOX, LUVERNE, ALABAMA.**

CAUCASIANS CARNIOLANS

Beekeepers, have you tried the GRAY bees? Both races are very hardy, very prolific, gentle, wonderful winterers, highly resistant to all diseases, and as honey producers have no equal. **Caucasians hold world's record** for comb honey production. We offer Caucasians and Carniolans in their purity at very reasonable prices. Direct imported or our own selected stock, bred for honey production. Get started with these bees today! Write for our free circular which gives you full information.

W. A. Holmberg, Ceres, California

Shaw Queens

The true SHAW line-bred Italian stock, improved by selection through years of careful breeding, a wonderful worker and producer, that has given universal satisfaction for years. Do not confound OUR QUEENS with the worthless hybrids that are offered by others at fabulous prices. We are here to stay in the queen-breeding business and can not afford to send out anything but BEST. We offer them at one dollar each; 10 per cent discount on quantity lots.

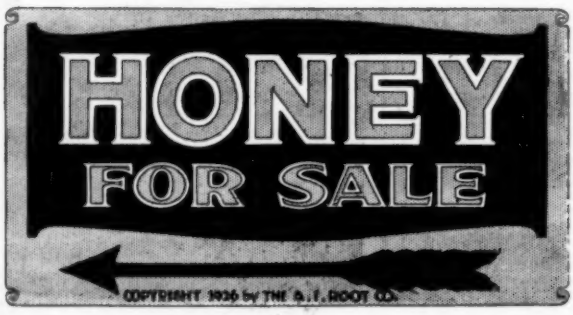
Give us a trial.

SHAW & RAMSEY

LOREAUVILLE, LOUISIANA.

Can Be Read 300 Feet Away

Finest Set of Three-Colored Outdoor Honey Signs



24 x 42 inches

These most attractive large honey signs are printed in a bright navy blue and a canary yellow, and so designed by one of the largest sign manufacturers in the country as to give the signs a three-color effect. They are printed with non-fading inks on heavy "Duckine," that is water-proof. The edges are double thickness, and when tacked up are up to stay. "Honey For Sale" signs measure 24 x 42 inches (including the fold), and this large size and the striking combination of colors enables one to read it 300 feet away. Two of these signs, one with a right and one with a left hand arrow, are furnished in the set, so that the beekeper can place one in each direction from the stand or house and at any distance he wishes.

The other sign in the set, "Honey, the Health Sweet, Aboslutely Pure," is printed on "Duckine" in the same non-fading colors and is to be used at the roadside stand or the house. It measures 18 x 36 inches (including the fold). This set of three honey-selling signs is offered to you to help you sell your honey locally and secure the best market price.

18 x 36 inches

The A. I. Root Company, Medina, Ohio.

Gentlemen: Enclosed find $1.00 for which send me postpaid, your set of three signs composed of two large "Honey for Sale" signs (24 x 42 inches), one with a right-hand arrow and one with a left-hand arrow, and one large sign (18 x 36 inches) for the roadside stand or house, which reads, "Honey For Sale—The Health Sweet—Absolutely Pure," and a copy of your 32-page booklet, "How to Sell Honey."

Name .....

Address .....

SOUR HONEY DEPARTMENT

(Continued from page 399.)

ness goin good, goodbye old lumber yard for allays, and huntin and fishin continuous with Jay Smith and Rus Kelty up in north Michigan. Whoopee, Ab!''

I couldn't wait no longer then, so I says: ''Now ready, Ab, think what you are goin to see first in the whole planet.'' Then I takes off the outer cover. I pawses. 'Think again,'' says I to Ab, ''till you reelize what you're now about to envizage,'' and then sort of slow and majestic so as Ab would reelize it thorough I takes off the inner cover.

Not a bee in sight.

Right quick I spoke up to Ab, ''all right so far. We got complete quiessants.'' I had give Ab a glance and I thought I see on his face signs of sarcastick exactly as how he looked first coon night last fall when that low down varmit of a rabbit chasin coon dog of mine showed hisself up so awful. But I didn't pretend to notice it none and just kept repeatin, ''all right so far, Ab, all right so far, Ab, all right so far, everthin quiessant exactly as it oughter be.''

Just afore liftin out the first frame I pawsed agin and says, ''Ab, now's the great moment so get the time to a second,'' and I lifts the middle frame.

MICE!!

Mice, yes, a old one and six little ones in the pink. That was all that was alive in sight, too.

Ab never looked sarcasticker. If I had let it, his looks would have altogether

(Continued on page 402.)

GOLDEN QUEENS AND THREE-BANDED BEES FOR 1926

Untested queens, $1.00 each. Tested, $1.50 each. 2-lb. package of bees, $3.00; 3-lb. package of bees, $4.50; nucleus, $1.50 per frame. Addition pound of bees with nucleus, $1.00. No disease, safe arrival guaranteed; bees inspected; never had disease.

J. W. SHERMAN, VALDOSTA, GEORGIA.

Carniolans

build up rapidly during the changing weather of the spring months. Good wintering with rapid development of brood during the spring months is necessary to secure a crop of honey in our northern states. Besides, Carniolans are very gentle, very prolific at all times, and most excellent workers. My 1925 average was over 150 lbs. extracted per colony. Ask for my free paper, **''Merits of the Carniolan Bee.''**

1 select untested.....$1.50 each
6 select untested or more.. 1.40 each
Select tested ..... 2.50 each

Twenty years' experience with Carniolans. I also breed Jan Strgar and M. Ambrozic imported strains. Safe arrival in U. S. and satisfaction guaranteed.

ALBERT G. HANN

GLEN GARDNER - - - NEW JERSEY

Albinos

are the most beautiful bees you ever saw—virtually shieks in the bee world. Their white fuzzy coats are very luxuriant. Albinos are extremely gentle, very prolific and good honey-gatherers.

It is a remarkable fact that these bees do not readily hybridize. They retain their individuality. In this region they are found in many small, neglected apiaries in their purity. Having been neighbors for many years of black bees and Italians, they prove to the world that they do have the ability to keep themselves pure and uncontaminated.

We have had these bees in our yards for over twenty-five years and have found them to be better bees in every respect than any Italians that we have ever tried. I have the original stock of the noted beekeeper who perfected them over forty years ago.

Try a few of these queens. I know you will be pleased with their appearance, the character of their workers and their wonderful capacity as honey producers.

I am prepared to furnish Albino queens at the following prices: Untested, $2.50 each; dozen lots, $2.00 each. Breeders (limited number), $15.00 each.

Send for circular. Order early. Orders filled in rotation as received.

Sterling Nusbaum

Carroll County. TANEYTOWN, MARYLAND

Save 10c TO 15c PER POUND ON FOUNDATION

We make the finest **CYPRESS** bee hives at the lowest prices. Write now for free 1926 catalog.

GULF COAST BEE CO., HOUMA, LA.

Imperial Three-Banded Italians

Our queens are long-lived, hardy, and prolific, due to select breeding. We breed for quality, not quantity. Queens from Coffey's never bring disappointment. Untested, $1.00 each; 12 for $10.00; 25 or more, 80c each. Add 50% to these prices for tested queens. Breeders, $5.00. After June 15, untested, 80c each; 12 for $9.00; 25 or more, 70c each. **The Coffey Apiaries, Producers of Quality Queens, P. O. Box 8, Whitsett, Texas.**

Beeswax

WE PAY THE BEST MARKET PRICE

Write for prices and shipping instructions.

The A. I. Root Co.

Medina, Ohio

Read This

And bear in mind that we have not received the slightest complaint from a dissatisfied customer:

"The 50 queens bought of you last year did fine and were as good a bunch of queens as we have ever bought at any price."—Montana.

"I am writing to thank you for the 25 queens I got from you last spring, and I want to say they were the best queens I ever received from the South. If you will give me the same service this spring I want you to quote me prices on the following," etc.—Iowa.

Names on request.

You may expect the same standard of quality and service.

Three-banded Italian Queens, prices as follows: 1 to 11, $1.00 each; 12 to 24, 90c each; 25 to 49, 80c each; 50 to 100, 75c each; 100 or more, 70c each.

Safe arrival and satisfaction guaranteed.

John C. Hogg

Ramer - - Alabama

When You Want

Bee Supplies or Honey Containers "AT ONCE"

Send Your Order to

W. R. PERRY CO.

We have a complete stock of Leahy's Standard Bee Supplies. We make prompt shipment. Your order goes out of Omaha on the first train.

We want to send you our new price list on honey containers. Write for our catalog and container list.

W. R. PERRY CO.

1205 Howard St., Omaha, Neb.

"Our catalog prices are low"

SOUR HONEY DEPARTMENT

(Continued from page 401.)

bogged me down. But I innardly felt I still sure had triumphed. So I stronged up and pretended as I didn't see his sarcastick atall and says to oncet, "praps it don't look quite so good at first as we hoped, Ab, but it's a triumph just the same."

"How's that," says Ab. "All I see alive is the mice. You warn't breedin any new mice strains, was you?" He said it sarcasticker than I ever heard him afore, and then he says onto it, "Praps your Triumph strain lays quiessant onto the bottom of the hive till the honey flow comes and so saves stores."

"Ab," says I, "you are too quick on the trigger. I know people as what starts their mouths agoin afore their brains get agoin if that kind have any. Look at them mice. Ain't they plump and fat? What have they been livin on?

(Continued on page 403.)

Package Bees

QUALITY — SERVICE
None better at any price
Illustrated circular free

Van's Honey Farms, Hebron, Indiana

Mott's Northern Bred Italian Queens

All selected queens. Guarantee all to be pure mated, or replace free. No disease. Safe arrival guaranteed. Select untested till June 1, $1.25 each; $1.00 each thereafter. Select tested, $2.00, virgins, 50c. Satisfied customers for 21 years. Michigan bound on the north and east by Ontario, Canada. List free.

E. E. MOTT & SON - GLENWOOD, MICH.

The Last One

This will be our last display ad for the season. We have added many new customers to our list and have received letters from many of them praising our quality and service.

Our prices for the balance of the season are as follows:

2-lb. packages with queens: 1 to 24, $3.75; 25 to 50, $3.50.

Purely mated untested queens: 1 to 9, $1.00; 10 to 24, 90c; 25 to 50, 75c.

Valley Bee & Honey Co.

BOX 703. WESLACO, TEXAS.

SOUR HONEY DEPARTMENT

(Continued from page 402.)

Did you ever see slicker mice? No, you aint. What is the lojick of it then? They've been feedin on bees in first-class A No. 1 condition. Not on starved bees or dead bees. No, sir. They have prospered and fatted on as fine a colony of bees as what had resisted cold and hunger complete till recent when they got eat up. That's the lojick of it, Ab, and I want you to hang by the binder when we see Demuth and Jack Deyell and tell 'em so right after me."

Then I lifted out the rest of the frames, first feedin my new coon pup some veal mice, and tho there warn't no live bees the evidents all went to strengthen up my triumph because the bees' legs and wings on the bottom of the hive was all in good condition, no frayed out wings, and the legs and mandibbles and all remains lookin in A No. 1 shape and sure come off bees in just fine condition. "Ab," says I, "the prime condition of these bee remains proves stronger my winter-hunger resistant teekneek and theory correct to a tee. The Triumph strain is a guaranteed certainty and put off only one year on account of mice attacks."

Then I opens up the other hive and conditions was exactly the same, only there was two nests of young mice where

(Continued on page 405.)

QUEENS 70c

THREE-BANDED ITALIAN BEES ONLY

I will have hundreds of No. 1 first-class queens for June and July delivery. These queens will be reared from a natural honey flow from basswood and clover. Honey-bred queens are superior to those raised under an artificial sugar flow. I will guarantee these queens to give perfect satisfaction or I will replace or refund your money. You are the judge. I am not a new man on the job. I have been breeding three-banded Italian queens and bees for eight years. Now, to know these queens, split your order with some other good queen-breeder and test them yourself. Health certificate with each shipment. Satisfaction and safe arrival guaranteed. Reference, Bank of Ramer, Ala.; First National Bank, Lapine, Ala.

PRICES JUNE AND JULY:

	1	6	12	50
Untested queens	$0.70	$4.00	$7.75	$30.00
Select untested	.80	4.50	8.50	35.00
Tested queens	1.50 each			
Select tested	1.75 each			

One 2-lb. package bees with select untested queens, $4.00 each; 12 or more, $3.75 each. I ship by express only, F. O. B.

N. Norman, Apiarist, Ramer, Ala.

The Secret of Success

Is good young Italian queens. I have them, as good as money can buy. I have doubled my output for this season, and have room for more customers, so I am offering the following prices that I may add your name to my list of satisfied customers.

One select untested Italian queen, 75c; six, $4.00; twelve, $7.50; one hundred, $60.00. Your order will not be too large for me to handle, or too small to be appreciated. Pure mating, safe delivery, and satisfaction guaranteed on every queen. Health certificate with each shipment.

P. M. Williams

FORT DEPOSIT - - - ALABAMA

Queens

Good Queens are as essential to good beekeeping as good blood is to any other kind of stock.

We raise only the best that can be had, and furthermore we stand behind our product. If a queen you buy from us fails to keep up the standard, just return her to us and we will immediately replace her.

PRICES

June 1 to October 15.

Untested	$0.90 each
Select untested	1.00 each
Tested	1.00 each
Select tested	1.25 each
Breeders	$5.00 to $25.00

Note we make no reduction for quantity, as we take same pains with a large order as with a small one.

Geo. A. Hummer & Son

PRAIRIE POINT, MISSISSIPPI.

Selected Queens

OF THE HIGHEST QUALITY

Queens by return mail.
Three-banded queens our specialty.

Our queens produce bees that are wonderful honey-gatherers, gentle and most resistant to all diseases. We guarantee every queen we ship to give entire satisfaction. We clip wings free of charge on request. Safe arrival and prompt delivery fully guaranteed. There may be other queens just as good, but we believe you will find few better. To know them, try them.

PRICES.

Select untested	**$0.75 each**
50 or more	**65c each**
Select Tested	**1.50 each**

Hayneville Apiary Co.

W. E. Harrell, Prop.
HAYNEVILLE, ALABAMA

Jensen's Queens

BRIGHT THREE-BANDED ITALIANS

June 65c Each

IN HUNDRED LOTS

"OUR PRIDE," the best we know how to produce, and that is one thing we do know how to do. With the package season out of the way, our every attention will center in our queen yards.

Having again enlarged our yards we will be able to fill all orders promptly.

We guarantee: Freedom from disease, pure mating, safe arrival, prompt service and satisfaction.

Prices for June: Untested, 1 to 25, 80c each; 26 to 99, 70c each; 100 and up, 65c each. Tested, $1.25; breeders, $5.00.

JENSEN'S APIARIES

CRAWFORD, MISSISSIPPI

Leininger's Strain of Italians

We have been queen-breeders for nearly 50 years. In all this time we have tested nearly every strain of Italian Bees in the U. S. A. By this careful selection and breeding we have succeeded in producing a strain of bees surpassed by none but superior to many—bees that are gentle and great honey-gatherers. Therefore, if you buy queens from us you may be assured that back of them are nearly 50 years of careful breeding for the production of honey.

Beginning June 1 we will be ready to mail queens from this famous strain at the following prices: 1 to 5, $1.00 each; 6, $5.50; 12, $10.50; 100, $85.00. Tested, $1.50 each. Select breeders, $5.00 to $10.00 each.

Safe arrival and satisfaction guaranteed.

Fred Leininger & Son, Delphos, Ohio

Forehand's Three-band Italian Bees and Queens

are leaders in honey getting, gentleness, and beauty. They have been bred for the highest qualities for 33 years.

Untested queens, 1 to 11, $1.00; 12 to 25, 85c; 25 to 99, 80c.
Select untested queens, 1 to 11, $1.25; 12 to 25. $1.00; 25 to 99, 90c.

PACKAGE BEES, F. O. B. GONZALES, FLA., VIA EXPRESS:

1-pound package of bees with queen, $3.00; 10 packages and up, $2.75.
2-pound package of bees with queen, $4.50; 10 packages and up, $4.00.
3-pound package of bees with queen, $5.75; 10 packages and up, $5.25.

100 per cent live delivery and perfect satisfaction guaranteed in United States and Canada. Descriptive circular and prices on lots of 100 or more packages or queens upon application.

N. Forehand, Gonzalez, Florida

SOUR HONEY DEPARTMENT

(Continued from page 404.)

the winter cluster oncet was. All the mice here was as fat and plump as in the first hive and so I says to Ab: "Just so much more proof as how strong this swarm was afore they got eat, for they supported two mice families and the vizible remains is as plump and off as good bees as in the other hive. My triumph, Ab, is more sure and certain with this second hive open than ever, and only put off one year. I know Boss Carr and Jes Dalton and Laird and Doc Needham and Jay Smith and Rus Kelty will be willin to wait for their Triumph queens seein it's only a year off. Geo. Rea and you will too.

Ab warnt lookin quite so sarcastick but he says: "Your proof's in these bee remains bein in good condition and the mice bein fat, is that it?"

"Yes, Ab," says I, "that's about it and that's enough too."

"What you going to tell Demuth and Jack Deyell when you see 'em?"

"Just exactly what I've said here, Ab, only harder."

"Then I guess I'll throw the dead bees' wings and legs and mandibbles, etc., into the dreen here,"—and afore I could stop him, Ab had got down off the fence pretty spry and done it.

"Now you've destroyed all my evi-

(Conitnued on page 406.)

QUEENS

Bright Three-Banded Italian 75 cents by Return Mail

Mr. Beekeeper, why can we offer you good queens so cheap? Because basswood and clover are in full bloom, turning out nectar by the barrels. All of our colonies are boiling over with bees, and all of our nuclei in full operation turning out queens every day as fine as you ever saw. Now is your time to head your colonies with a good queen at a low price. NORMAN BROS.' queens are backed by years of improving and selecting from the finest mothers and mated to selected drones. You take no risk. If you are not satisfied return them and we will replace or refund your money. All orders filled by return mail or soon thereafter. We ship package bees by express only.

PRICES JUNE AND JULY

	1	6	12	100
Untested queens	$0.75	$4.40	$8.50	$65.00
Select Untested	.85	5.00	9.50	70.00
Tested queens	1.50	8.50	16.00	
Select tested	1.75 each			

One 2-lb. package with select untested queen, $3.75; 12 or more, $3.50 each.

We guarantee pure mating, safe arrival, free from disease, and satisfaction in U. S. A. and Canada.

Norman Bros.' Apiaries

NAPTEL - - - - ALABAMA

Italian Queens

ALSO PACKAGE BEES AND NUCLEI

For June delivery we offer you the finest Italian queens that we have ever been able to send out; also we have a few more packages and nuclei for those who want delivery made at this date.

Our prices are right and our service and quality grow better.

Every mail brings us orders from beekeepers who have bought of us before. Their letters are full of good words for our quality and service. Give us a trial order, and then you, too, may know how we serve our customers. Our package bees and nuclei will build up to fine colonies, and under favorable cir cumstances will produce a surplus of honey if set out at any time up to June 20. Our price up to this date for 2-lb. pkg. with fine queen or 2-fr. nucleus with fine queen is $3.60 each; ten, $3.50; twenty-five, $3.40 each; 3-fr. nucleus, $1.00 more.

QUEENS—We are prepared to fill your order for queens by return mail or soon thereafter. Our strain of bees is as good as can be found. Our queens will head your colonies with fine vigorous bees which are beautiful and gentle. If you are requeening or making increase, our queens will do the work for you. No beekeeper ever made any surplus honey from a colony which was headed with a poor queen, neither will you. Price, $1.00 each; dozen, $9.50; half dozen, $5.00; hundred, $72.50.

We guarantee satisfaction on every thing we sell. Never had any disease here. State inspected.

Crenshaw County Apiaries

RUTLEDGE, ALABAMA.

500

I can ship five hundred two and three pound packages bees this month.

BEES, PER POUND..$1.00

QUEENS, EACH..... 1.00

Prompt shipment.

No disease.

W. H. Laws

Box 505

WHARTON, TEXAS

Morrison & Martin's Three-Banders

Having consolidated with Mr. Martin, we have increased our apiaries and queen-mating capacity 200 per cent, so will be able to take care of all queen orders promptly. We have been building up this strain for comb-honey production for the past 15 years. With our methods of management we produce large crops of comb honey year after year with very little swarming. This strain has been bred up for gentleness, honey-gathering, prolificness. Cap their honey white, gather very little propolis. Disease-free.

Queens are now ready at the following prices: Untested, one, $1.00; six, $5.50; dozen, $10.50; hundred, $85.00. Breeders, $5.00 and $10.00 each.

Safe arrival and perfect satisfaction guaranteed.

Morrison & Martin

Mandale - - - - Ohio

(Formerly Geo. Morrison)

SOUR HONEY DEPARTMENT

(Continued from page 405.)

dents, Ab," says I, and he says right back, "Well, praps you'll get along just as well without your evidents and besides aint you got the mice as is so fat and plump?" Then I looked round for the mouse evidents and that new coon hound pup of mine was just swallerin the last one. "A nice beginnin that pup dog is makin for me," says I to Ab. "Between you and the pup I ain't a bit of evidents left in sight atall."

"But," says Ab, "why aint we two evidents enough?"

"Dear old pardner," says I softenin, "you're right. Well thought, Ab, for didn't we both see the bee remains and the mice in such good condition as only prime bees could of made em? We did. Bring on Demuth and Deyell and all the rest of the sneerin' highbrow pack and we'll tell 'em and the world, won't we, Ab?"

"We will," says Ab. So I helped Ab over the fence, and our arms was around each other's shoulders and we was feelin good and goin up toward my house when my dear patient lovin wife comes out on our back stoop. She calls out: "Well, how is it?" She aint long on words. I stood up tall as I could, kind of slapped

(Continued on page 411.)

Root Quality Italian Queens

Realizing as we do the value of good queens to beekeepers, we are making an honest effort to produce the best queens obtainable, and also to sell them at the lowest prices consistent with cost of high-class production. We will not cheapen our queens to lower the price.

QUEEN PRICES TO JUNE 15.

Quantity:	1 to 9.	10 to 24.	25 to 49.	50 to 99.	100 or over.
Untested	$1.50 each.	$1.35 each.	$1.25 each.	$1.10 each.	$1.00 each.
Select Untested	2.00 each.	1.80 each.	1.70 each.	1.55 each.	1.45 each.
Select Tested	3.00 each.	2.70 each.	(Note: The price of Tested Queens does not change throughout the season.)		
Tested	2.50 each.	2.25 each.			

QUEEN PRICES AFTER JUNE 15.

Quantity:	1 to 9.	10 to 24.	25 to 49.	50 to 99.	100 or more.
Untested	$1.20 each.	$1.00 each.	$0.90 each.	$0.80 each.	$0.75 each.
Select Untested	1.50 each	1.40 each.	1.20 each.	1.10 each.	1.00 each.

Note: Our Untested and Select Untested laying queens prove to be approximately 99 per cent purely mated.

PRICES OF BEES IN 2-LB. COMBLESS PACKAGES BY EXPRESS

	1 to 9 pkgs.	10 to 24 pkgs.	25 or more pkgs.
2-pound package of bees	$5.00 each.	$4.50 each.	$4.00 each.

Add price of queens wanted to package price given above. These prices are f. o. b. Medina, Ohio

The A. I. Root Company, Medina, Ohio

PLEDGE TO WESTERN BEEKEEPERS

1. To give you the very best of prompt, interested service, by shipping, if humanly possible to do so, the same day your order is received.
2. To furnish you with goods that are dependable—Root goods that are built to last and make all apiary work simpler and more profitable.

By
Your Root Dealer

June.... Critical Days

A heavy flow.... Emergency service needed to see you through..... The Root dealer will do all he can to serve you, completely and promptly.

The A. I. Root Co. of Iowa,
Council Bluffs, Iowa.

ROOT SALES AND SERVICE

NEBRASKA

Carhart Lumber Company, Wayne.
Griswold Seed Company, Lincoln.
F. R. Budler, Hampton.
Rosenberg Company, Lexington.
H. A. Mark, Oshkosh.

MISSOURI

John Nebel & Son, High Hill.
Springfield Seed Co., Springfield.
Mid-West Seed Co., Kansas City.
F. L. Ludemann & Company, Sedalia.
Paul Spencer, Gentry.
Cuthbertson & Thomas, Kearney.

KANSAS

A. V. Small, Augusta.
Herschel Short, Altoona
O. K. Troughton, Seneca.
J. Underwood & Sons, Lawrence.
Claud Lane, Valley Falls.
Ralph Coen, Garden City.
Price Bondurant, Great Bend.

IOWA

The A. I. Root Co. of Iowa, Council Bluffs.
Iowa Seed Company, Des Moines.
Wertz Seed Company, Sioux City.

SOUTH DAKOTA

Mitchell Storage & Trf. Co., Mitchell.
Rapid City Implement Co., Rapid City.
Folsland Brothers, Oldham.
Oscar H. Clark, Newell.

COLORADO

Charles Kastning, Pueblo.

And Many Others. "There's a Root Dealer Near You."

When he owned two box hives.

Schenectady Bee Supply Company

242 Union Street,
Schenectady, New York

WM. H. KEYSER, Manager.

The man who grew with the business

ROOT QUALITY
BEE SUPPLIES

Send for catalog.

Highest market price allowed for your wax.

As manager with car-lot stock to draw from.

New England

beekeepers can find a full line of supplies here at all times. Send your orders in early and be prepared for a good season. Nearly all supplies can now be sent by parcel post, saving you time and money. Send for catalog.

H. H. JEPSON

237 Park St. Medford, 55 Mass.

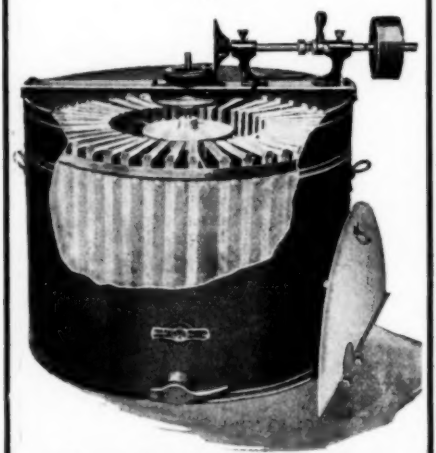
Beekeepers' Supplies for 1926

Begin the season right. Buy early and good quality of hives, sections, Three-ply foundation, etc. We carry Root's goods of high quality in stock that are mostly in demand by the average beekeeper. Can fill orders promptly. Beeswax wanted. Send for our free catalog.

J. Nebel & Son Supply Co.

Montgomery County. High Hill, Mo.

At Syracuse



The Simplicity Extractor On Exhibit

A. I. Root Co. of Syracuse

1631 WEST GENESEE ST.,
SYRACUSE, NEW YORK

Serves You Best

Buyers of Bee Supplies

Will find us particularly well equipped to supply your needs in Hives, Supers, Frames, Sections, and Root's Foundation. All other Bee Supplies in stock for quick shipments.

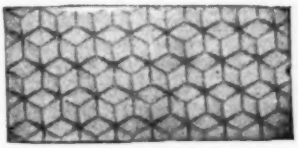
Let your next inquiry or order come to us.

August Lotz Company

Boyd, Wisconsin

JUST A HINT

We Can Save You Big Money



MUTH'S QUALITY FOUNDATION

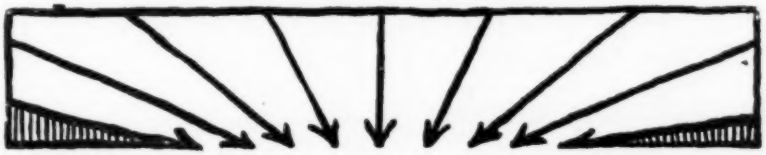
5-lb. box lot.

Medium Brood .....80c per lb.
Light Brood .....82c per lb.
Thin Surplus .....88c per lb.
Extra Thin Surplus .....90c per lb.
Write for prices on larger quantities.

5 10-frame 1-story metal cover hives	$14.45
5 8-frame 1-story metal cover hives	12.90
5 10-frame 1 story Jumbo metal cover hives	15.70
5 10-frame 1-story Excelsior cover hives	11.95
5 8-frame 1-story Excelsior cover hives	10.95
5 10-frame No. 1 comb-honey supers	4.40
5 8-frame No. 1 comb-honey supers	4.05
5 10-frame shallow extracting supers	4.50
5 8-frame shallow extracting supers	4.20
5 10-frame bodies with frames	6.50
5 8-frame bodies with frames	5.80
100 Hoffman Frames	5.30
100 metal-spaced frames, Hoffman	7.25
100 shallow extracting frames, 5 3/8-inch	4.00
100 shallow extracting frames, 4 1/2-inch	4.00
1000 No. 1 4 1/4x4 1/4x1 7/8 Sections	11.35
1000 No. 2 4 1/4x4 1/4x1 7/8 Sections	10.60
No. 15 Reversible Cowan Honey Extractor	29.85
No. 17 Reversible Cowan Honey Extractor	32.85
No. 5 Novice Honey Extractor	25.75
Muth Ideal Bee Veil	.90

Space limits our attractive prices. Better write for our list of bargain prices. We guarantee you that you will save money on your purchases from us and that you will receive the highest of quality in our supplies.

Beeswax Rendered from old Combs



The Fred W. Muth Co.

Pearl and Walnut Sts. *Cincinnati, Ohio*

Honey Girl Strain Pure Italians

We offer you higher quality than ever before, by crossing our goldens, Hamburg Honey Girl and Conrad s Honey Girl strains, and our three-banded 20-comb Honey Girl and 24-comb Honey Girl strains. To obtain the best results and intensify the best qualities of these strains required the attention of an expert. This work was entrusted to Mr. J. L. St. Romain, the originator of the Honey Girl strain.

Hundreds of queens were pedigreed. Six apiaries were established to mate the progeny of different breeding queens. Only the best are retained for breeding. We wish all our customers could visit us to see for themselves what we are doing to make the Honey Girls the best bees in the world. We would like to show you hundreds and hundreds of colonies of pure Honey Girl bees headed by queens whose breeding we pedigree in order to trace back any unusual qualities. In this way we eliminate the undesirable or breed to intensify the desirable qualities that every beekeeper likes—productivity, hardiness, disease resistance, tongue length, temper, and beauty.

Space does not permit us to tell you all we are doing, and neither would that convince you. A trial order is the only way you will be convinced. And you must be convinced, because we will send you the best we know how to produce. Our price is so low that every beekeeper can afford to give us a trial order. Do not think that our price is too low and that we can not give you your money's worth at our low price. We can do it because our sales are large.

We now quote 5-pound swarms with untested Honey Girl queens, 1 to 9 inc., $6.30 each; 10 to 49 inc., $6.05; 50 to 99 inc., $5.90 each; 100 or more, $5.80 each.

For other size packages and for queens without packages see our advertisement on page 419.

Honey Girl Apiaries, Hamburg, La.

GOLDEN ITALIAN QUEENS BRED FOR BUSINESS

Only one grade—select. Safe arrival and satisfaction guaranteed.

Untested, 1, $1.00; 12, $10.00. Tested, $2.50 each.

1-lb. pkg. of bees and untested queen, $3.00; 2 lbs., $5.00. All mail charges paid.

E. A. SIMMONS - - GREENVILLE, ALABAMA

Achord Queens

The Best of Pure Three-Banded Italians

Select Young Laying Queens
now $1.00 each
any number

After June 15th
75c each, any number

W. D. Achord

Fitzpatrick - - Alabama

Packages on Combs

We are through with the rush orders, so we can start in new now. Notice we are advertising in Gleanings since 1915. We ship on comb only as we have proofs that the natural feed is better for bees in transit. Each package is furnished with a government health certificate. Our bees are inspected twice a year by government inspectors. We have the light three-banded bees and queens. We ship on date promised or refund your money. We do all work our selves, no errors to be made.

Two-frame nuclei with 2 lbs. bees and a selected untested queen, 1 to 10, $4.00 each; 10 to 25, $3.75 each. Each additional frame add 60c, and additional pound of bees add 60c. If 25 pkgs. are wanted, wire at our expense to reserve you an open space, and mail check. Bees will be shipped as soon as remittance is received. We have the standard Hoffman frames only. After June 15 I offer select untested queens for 90c each; 25 or more, 80c each. A 5-lb. package with a select tested queen and two frames brood, $6.50 each. Reference, my bank, Avoyalles Bank, Moreauville, La. Order with remittance.

The Liberty Apiary

C. A. Mayeux, Prop. HAMBURG, LA.

SOUR HONEY DEPARTMENT

(Continued from page 406.)

my chest and looked superior like, and began confidanter than so it had been anybody else whatever. I got as far as the mice when she took charge of the conversashun complete and I didn't get no re-entry again atall. She says: "There, if you had husked that sweet corn out for sced last fall as I told you to do and you promised, there wouldn't have been any mice collected there, so there wouldn't." She said a good deal more as I needn't repeat now, but she didn't shake my triumph none in my own opinion, so she didn't, and I turned around to ask Ab if he didn't agree with me. He was gone and had got all the way home and was just goin up his back step awful fast for a man with rheumatiz into his feet.

When me and Ab collected again later in the afternoon on the far side of his barn away from my house, and I had gone all over the supportin evidents for my Triumphs again and asked if he didn't agree complete, he says sort of discouraged, "honest, Old Drone, just atween us out here behind the barn, do you really think them bees died of mice or your style of winterin?"

It seemed as if I had been Judas Is-

(Continued on page 413.)

A spoon now's the price of a swarm,
They ought to make good if it's warm;
So give them a queen, for success it will mean,
And they'll give you no further alarm.

For that swarm you catch, of course you want one of our high-grade queens. Also for any colony whose queen is not top-notch. Then, too, this is the month to divide your colonies and make increase. Our catalog explains the best methods of doing this. Write for it.

You will like our queens.

Prices for June. 1 to 4 inclusive, $2.00 each; 5 to 9 inclusive, $1.95 each; 10 or more, $1.90 each. After July 1, 1 to 4 inclusive, $1.50 each; 5 to 9 inclusive, $1.45 each; 10 to 24 inclusive, $1.40 each; 25 to 49 inclusive, $1.35 each; 50 to 74 inclusive, $1.30 each; 75 to 99 inclusive, $1.25 each; 100 or more, $1.20 each. Breeding queens, our very best, $10.00 each.

JAY SMITH

ROUTE THREE VINCENNES, IND.

St. Romain High Quality

GOLDEN AND THREE-BANDED ITALIAN QUEENS AND BEES

Are now ready for May Delivery

Now from June 1st on there will be an attractive price on queens and package bees. Write for prices on same. Address

John St. Romain

MARKSVILLE - - - LOUISIANA

—QUEENS OF—

Moore's Strain

OF ITALIANS PRODUCE WORKERS
That fill the supers quick
With honey nice and thick

They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.

Untested queens, $1.00; 6, $5.00; 12, $9.00. Select Untested, $1.25; 6, $6.00; 12, $11.00. Safe arrival and satisfaction guaranteed. Circular free.

J. P. MOORE, QUEEN BREEDER,
Route 1, Morgan, Kentucky.

Townsend's Bulletin No. 29

Townsend & Camos, Breeders of ARISTOCRAT strain of three-banded Italian bees. Originally from imported stock and bred for more than forty years by the J. W. K. Shaw & Co. Having the entire breeding stock of the Shaw yards made it possible for us to develop this famous strain. You will make no mistake by starting in with ARISTOCRAT stock. While we could likely get more money for the Aristocrat strain of bees than we are asking, we have decided not to ask more than others sell for, i. e., one dollar each or $10.00 per dozen for untested queens. It is not our desire to breed queens in quantities, but for **quality** only, so will not offer queens in quantities more than one dozen to a person. Every untested queen we mail out will be selected, and none but the very best, perfectly formed queens will go out under our ARISTOCRAT name. No disease ever nearer than 100 miles of Loreauville. Safe delivery by mail. E. D. Townsend, sales manager and adviser. J. P. Camos, queen-breeder and part owner. Address Townsend & Camos, Northstar, Michigan, where the sales are handled, and the queens will be mailed from our yards at Loureauville, La.. "Where the good queens come from."

Hot Z-Z-Z-ijjety

$500 for a Queen

BEEKEEPERS—This is your opportunity to buy **Miller's Improved Strain of Italian Queens.** Our queens produce large bees, bright in color. This strain of bees is making a reputation for honey-gathering, hardiness, and gentleness. In 1924 one colony on test produced 100 lbs. straight red clover comb honey. Write for our literature.

PRICES FOR 1926—Untested, 1, $1.50; 6, $8.00; 12, $15.00. Tested, $2.50 each.

GUARANTEE—We guarantee safe arrival in U. S. A. and Canada. If you are not satisfied with queens when you receive them return them at once and I will refund you your money.

We guarantee all Untested Queens to be laying before we will ship them. We guarantee our queens to be free from all disease.

Wood J. Miller

Connersville - - - - Indiana

Get Running's Queens and Get Honey

Prices After June 1st as follows:

1 choice untested Italian queen	$0.90
6 choice untested Italian queens	4.80
12 choice untested Italian queens	9.00
1 choice tested Italian queen	1.75
6 choice tested Italian queens	9.00

Write for prices on larger quantities.

All queens shipped from Sumterville, Alabama.

—ADDRESS—

David Running

Sumterville, Alabama, or Filion, Michigan.

I am booked full on package bees for this season.

Pure, Bright Three-Banded Italian Queens

In selecting breeders used in our queen yards we have not overlooked prolificness, honey-gathering qualities, beauty, and longevity. In fact, we are always looking for something better when picking our breeders.

We absolutely guarantee safe delivery and satisfaction, and are ever ready to make honest adjustments in case we have made a mistake; our customers shall be the judges only. In case you received a queen from us that does not please you, write us and we will make it right by replacement or money refunded.

Prices for June: Select untested queens, each, 75c; 6, $4.25; 12, $8.00; 100, $65.00. Select tested queens, each, $1.25; 6, $7.00; 12, $13.50. Large 6-hole cages used with invert sugar candy. Health certificate with each order.

Lake Shore Apiaries, Covington, Louisiana

SOUR HONEY DEPARTMENT

(Continued from page 411.)

carroted right there. I gave Ab one cold look and went around the corner of the barn for home. There I was with a sure triumph for all I claimed and yet Ab and my own home desertin the standards in face of sure battle from Demuth and Jack Deyell and all the rest of the beekeepin highbrows. How awful I felt and all crimbled up like. But the Triumph strain still lives, or will live next year, and Boss Carr and Jes Dalton and Doc Needham and Jay Smith and Rus Kelty and Geo. Rea and even Ab are just as sure as ever of their Triumph strain queens.

But just now I feel so awful as about Ab's lettin go the binder as it were in a crisis and my poor good wife's present general disposishon toward the whole universe with me in it, that I can't even write nothin as a warnin agin old black fox Byer as should be every month.

But don't forget my Triumph strain is solid on the rock now and only put off

(Continued on page 415.)

PURE ITALIAN QUEENS

Of tested quality. April to November delivery. Bees inspected. Select untested, $1.00; dozen, $9.00.

Hunter & Reamy, Quitman, Ga.

Knight's Queens

Line-Bred Three-Banded Leather-Colored Italians

THEY ARE GENTLE, THE BEST HONEY GATHERERS, AND BEST WINTERERS

PRICES TO JULY 1:

1 select (one grade) young laying queen $1.00
5 select (one grade) young laying queens 4.50
10 select (one grade) young laying queens 8.00
20 or more, each ..... .75

All queens guaranteed mated pure, and to give perfect satisfaction. Can still furnish 2-lb. package bees with queen for $4.75, f. o. b. your address.

Am breeding from queen I sent in 1924 to Mr. Elmer Kommer, Vice-President Illinois Beekeepers' Association, Woodhull, Ill. Mr. Kommer returned her to me to breed from and writes that her colony produced eleven supers comb honey in 1925. The whole yard, all headed with my queens, averaged seven supers. Surely nothing but a good strain of bees can accomplish such high averages. No disease. Health certificate with each shipment. Prompt service.

Jasper Knight, Hayneville, Ala.

800 Superior Italian Queens a Month

Mr. Beekeeper, this is not a large number of queens, but it is enough to head many a good COLONY during the season. These queens are reared and caged by NEWTON B. SMITH, manager of our apiary, and nothing but the best is allowed to go to a customer.

Our bees are BRIGHT, GENTLE, THREE-BAND ITALIANS, and are crossed with the bees from several of the best beekeepers in America. So this is why we feel that when you buy queens from us you get as good as can be had, and at a very reasonable price. Write for folder, or order from these prices.

We guarantee all bees and queens to reach you in good condition, and please you in every way. Never had disease in our apiary. Remember that our SERVICE is always at your command.

Select queens, until May 20, 1, 80c; 12, $9.00; 100, $70.00. After May 20, 1, 70c; 12, $7.80; 100, $60.00.

W. C. Smith & Company
CALHOUN - - - ALABAMA

Queens by Return Mail

The package season is now over and our two queen yards with more than a thousand nuclei and three experienced men are prepared to care for your queen orders promptly.

Why tolerate just ordinary queens when the best queens cost so little? The honey production records of our queens are unsurpassed.

1 untested, 80c; 12 for $9.00. 1 Tested, $1.50. Safe arrival and satisfaction guaranteed. No disease, inspection certificate with each shipment. Write for circular and prices on quantities.

J. M. Cutts & Son

R. 1. MONTGOMERY, ALA.

Bee Supplies That Are Made to Satisfy

The three points of Rusch Service that are keeping old customers satisfied and bringing new ones are:

RIGHT PRICES,
REAL SERVICE,
HIGHEST QUALITY

A trial order will convince you. Write for our catalog.

A. H. Rusch & Son Co.
Reedsville, Wisconsin

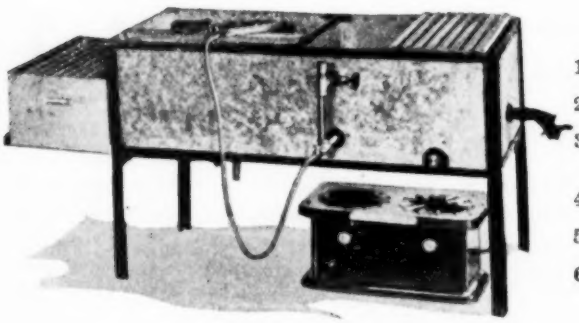
Special Bargain Supplies

In moving recently, we set aside a lot of material, slightly discolored, some items discontinued, but all regular run, and much of it entirely new, which we desire to dispose of at once. For that reason we are offering it at special bargain prices.

Send for complete list at once. It includes sections, shipping-cases, cans, hives, etc.

Dadant & Sons
Hamilton, Illinois

The Improved Six-in-One Uncapping Stand



(Pat. App. For.)

1. Uncapping Stand.
2. Steam Generator.
3. Separates Honey from Cappings.
4. Melts Wax.
5. Liquefies Granulated Honey.
6. Heats for Bottling.

The 6-in-1 has been on the market for over two years. It has proven its success. Some improvements have been made in construction and material. The price of the Standard 6-in-1 is $38.00 f. o. b Center City. A large 6-in-1 for large apiaries has been added to the line. Write for new folder giving complete details of both machines.

THE 6-IN-1 UNCAPPING STAND SAVES SPACE, LABOR, HONEY, MONEY

(Please mention this paper when writing.)

Bergquist Mfg. Co. - - Center City, Minnesota

SOUR HONEY DEPARTMENT

(Continued from page 413.)

one year. That's the great isshue. I have got the bee world solid by the tail and I am goin to twist and swing it till it yells for help and then some more help. You see. They gotto come to me for queens next year. OLD DRONE.

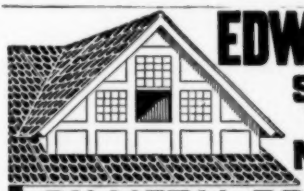
p. s.—My friends must rally to my support now as never afore. The beekeepin smart Alecs from Jim Hambleton down are in the last ditch and they will fight my Triumphs now they have proved up like rats in a corner. The hour of battle is here. Come on, all forrard lookin beekeepers. Hang by the binder.

2d p. s.—Since all the above was writ, Ab has come back strong for the Triumphs and says he has no doubts. But almost as important is his sayin as how the rheumatiz will sure all be out of his feet by the time I can get out of the lumber yard permanent and says too I might do worse than think about havin rheumatiz into my feet next winter. Ab also says the best fishin season he ever knew on the creek was follerin the latest coldest spring he ever knew and a year the black suckers didn't run atall either. Things is brightenin even not countin my new coon hound pup.

CHICKS $1.00 Per 100 BOOKS ORDER

Balance few days before shipping. Our low prices are causing a sensation. 12 kinds. ACCREDITED. Big, instructive, illustrated catalog free.

Colonial Poultry Farms Box 914 Pleasant Hill, Mo.



EDWARDS SAVES YOU MONEY

ON METAL ROOFS

We own our own sheet mills, roll our own sheets, make them into high grade Reo Metal Shingles, Sidings, Ceilings, and Roofings of type and style for every kind of building. Also Ready-Made Garages and Farm Buildings. We control every operation from the raw material to the finished roof, and we sell direct from our factories to the user. Not a dollar to divide with anybody but the customer! You get better values for less money.

OUTLAST THREE ORDINARY ROOFS

Edwards Metal Roofs are weather-proof, lightning-proof and fire-proof. Thousands of home owners take advantage of our offer every year. Ten thousand farmer friends are our best advertisement.

FREE SAMPLES & Roofing Book

Write today! Get our low prices and free samples. Save money, get better quality. Ask for Roofing Book No. 103, or for Garage Book.

THE EDWARDS MFG. CO. 035 683 Butler St. Cincinnati, Ohio

KILL WEEDS THIS QUICK EASY WAY--MULCH SOIL

Thousands of practical gardeners everywhere now use the **BARKER** to kill the weeds and make the level dust mulch which they know is so vital to the growth of plants. The rotary blades, working in combination with the underground knife, cut the weeds, shake the dirt off, and turn the roots up. "Best Weed-Killer Ever Used." **In the same operation,** they break up the clods and surface crust and spread this finely worked soil evenly. Mix and aerate the soil without disturbing nature's method of packing around the roots. Guards protect the leaves. You work a strip 6 to 12 inches wide, at a fast walk. A great time and labor saver.

"The BARKER is miles ahead of them all," says Wilbert Kelly, Reading, Pa. "Sure is death on weeds," Henry Christensen, Council Bluffs, Ia. "Worth all the rest combined," J. A. Musson, Bainbridge, N. Y.

WRITE FOR FREE BOOK

It will pay you to investigate. Our free book illustrates the BARKER and its work, gives sizes, prices, delivered to your station, etc. Write for it and Special Factory-to-User offer.

BARKER MFG. CO., BOX 116, DAVID CITY, NEBR.

Hutzelman's Solution

HAS STOOD THE SEVEREST TESTS DURING THE PAST FOUR YEARS

The Alcohol-Formalin Solution has passed tests where water-formalin solution and other water solutions have frequently failed, because they do not always penetrate sealed larvae. Water will not penetrate propolis.

The cost of Alcohol-Formalin Solution is a small part of the treatment. Only one recurrence after using water-formalin may be enough to offset the extra cost of Alcohol-Formalin many times over.

Since a dependable disinfectant is available, the beekeeper can go ahead and spend all the time and pains necessary to equip his apiary with the most perfect combs he knows how to produce, with the assurance that he will not be obliged to melt them up in a year or two on account of infection with American foul brood. The mere satisfaction that this assurance gives is worthy of consideration.

Patented October 14, 1924. This patent covers ALL solutions containing formalin, together with any volatile vehicle, including water.

For full information ask your dealer or write to

J. C. Hutzelman, M.D.
Glendale, Ohio

A Customer Talks

"Last year we handled two lines of cans and pails, yours and those of another manufacturer. We had a lot of trouble with the pails we had been using because of the ears pulling off. But, we are happy to tell you, we did not have a single complaint on yours."

Further reasons why you should use Wheeling Cans

Extra strong construction; combination one-piece ear and top; bright, clean appearance; cans that make good. Friction-top syrup and honey cans, packers and wax top cans, lard cans, five-gallon square cans. Packed in convenient shipping containers. You need them in Wheeling quality to take care of your needs.

Put your needs up to Wheeling.

Wheeling Can Co.
Wheeling, W. Va.

Mr. Western Beekeeper

Have you received our new catalog? We are headquarters for all beekeepers' supplies. Let us figure on your requirements in hives and frames.

Do not forget that we are the only West Coast manufacturers of the famous Airco Foundation, both regular and three-ply. We also carry Root Extractors, Root Sections and all Root appliances.

When you have honey to sell be sure to get our quotation. We are always in the market for beeswax.

The A. L. Boyden Company
(Formerly The A. I. Root Co. of California)

Los Angeles: Box 240, Arcade Station **San Francisco: 52 Main St.**

You are within Fourth Postal Zone from Lewis anywhere East of the Rocky Mountains

ANYWHERE IN IA., NEB., S. D., KAN. "BEEWARE" DISTRIBUTED NEAR YOU

LOOK AT THIS MAP. WHAT DOES IT MEAN?

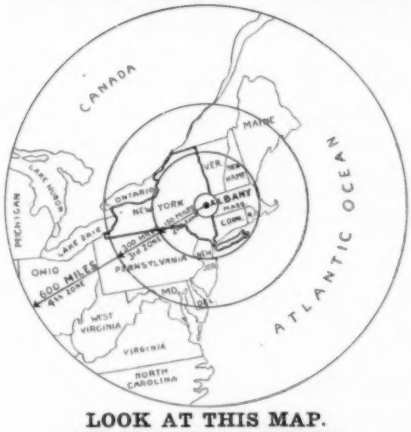
Nearly every beekeeper in Ia., Nebr., S. D., and Kan. is within the third postal zone of Sioux City, Ia. This means rapid service and prompt answering of all inquiries.

G. B. LEWIS COMPANY,
1921 FOURTH ST., SIOUX CITY, IOWA.

H. J. Pfiffner	Emmetsburg,	Ia.
Harry A. Pease	Shenandoah,	Ia.
D. L. Ginger	Langdon,	Ia.
L. A. Michaelsen	Holstein,	Ia.
Bruns Seed Co	Davenport,	Ia.
Orville B. Rogers	Newell,	Ia.
G. A. Ohmert & Son	Dubuque,	Ia.
J. W. Bittenbender	Knoxville,	Ia.
Hamilton Seed Co	Cedar Rapids,	Ia.
Bert A. Brown, Box 421	Des Moines,	Ia.
Kennedy & Sons	**Lawrence,**	**Kan.**
B. F. Ogg	Ottawa,	Kan.
Collins Apiaries, E. 6th Ave.,	Emporia,	Kan.
Boyd Hdwe. Co	Columbus,	Nebr.
Farmers Supply Co	Laurel,	Nebr.
L. R. Dillard	Page,	Nebr.
Gunn Seed Co	Lincoln,	Nebr.
Johnson Seed Co	Grand Island,	Nebr.
Kearney Hdwe. Co	Kearney,	Nebr.
Newton Hdwe. Co	Orchard,	Nebr.
Kuhl Bros.	Randolph,	Nebr.
Hayes-Lucas Lbr. Co	**Madison,**	**S. D.**
E. I. Underwood	**Willow Lake,**	**S. D.**
Lothrops Nursery	Aberdeen,	S. D.
Smith Hdwe. Co	Sioux Falls,	S. D.
A. F. Cunningham	Armour,	S. D.
Dakota Honey Co	Scotland,	S. D.
N. M. Bratton Merc. Co	Newell,	S. D.
F. D. Humbert	Grindstone,	S. D.
R. H. Dunbar	Chamberlain,	S. D.
W. S. Scott	Monroe,	S. D.
M. W. Thompson	Toronto,	S. D.
Peoples Flour & Feed Co	Mitchell,	S. D.

Carlot dealers are listed in blackface type.

ANYWHERE IN THE NORTHEAST "BEEWARE" DISTRIBUTED NEAR YOU



LOOK AT THIS MAP. WHAT DOES IT MEAN?

Nearly every beekeeper in the Northeast is within the third postal zone of Albany, N. Y. This means rapid service and prompt answering of all inquiries.

G. B. LEWIS COMPANY,
10 TIVOLI ST., ALBANY, N. Y.

Eugene Converse	Litchfield,	Conn.
Allen Latham	Norwichtown,	Conn.
F. H. Sanborn	Chicopee,	Mass.
F. C. Howard	Stoneham,	Mass.
I. Rawson, Box 176	Pittsfield,	Mass.
J. B. Perkins	Campello,	Mass.
R. B. Dunning	Bangor,	Me.
P. N. Townsend	Lebanon,	N. H.
L. D. Bragg	Epping,	N. H.
J. F. Garretson	Bound Brook,	N. J.
C. M. Wilson, College Ave.,	Elmira,	N. Y.
H. L. Case	Canandaigua,	N. Y.
C. W. Wilson	Canastota,	N. Y.
Charles Stewart	Johnstown,	N. Y.
Thomas Coverdale	Leicester,	N. Y.
A. R. Simmons	Livingston,	N. Y.
H. J. Greulick	Scotia,	N. Y.
Arthur J. Wilson, Rt. 1,	Hammond,	N. Y.
Stauble Bros	Monroe,	N. Y.
N. L. Stevens	Venice Center,	N. Y.
C. B. Clark	Cattaraugus,	N. Y.
A. R. Harvey	Mt. Morris,	N. Y.
F. B. Loomis	Rushville,	N. Y.
Reynolds Elev. Co.	Poughkeepsie,	N. Y.
J. B. & Chas. Merwin	Prattsville,	N. Y.
Harvey Seed Co	Buffalo,	N. Y.
W. C. Long	**Millville,**	**Pa.**
P. A. Schell Hdw. Co	Somerset,	Pa.
W. F. Schelly	Orefield,	Pa.
J. C. Johnson	Spring Run,	Pa.
C. M. Barnes	Hanover,	Pa.
Anderson Hdw. Co.	New Bethelehem,	Pa.

Carlot dealers are listed in blackface type.

SEE OUR ADVERTISEMENT ON INSIDE FRONT COVER PAGE.

PRICES ARE IMPORTANT

But remember that quality counts in the long run

When you buy **FOREHAND'S THREE-BANDS** you can depend upon a thrifty strain of bees that is **surpassed by none but superior to many.**

A third of a century of service to America's greatest honey producers assures you of young **THRIFTY bees** that are guaranteed to please.

Prices quoted are for delivery by express F. O. B. our station, and include untested queens.

TWO-POUND PACKAGES—1 to 9, $3.95 each; 10 to 24, $3.85 each; 25 to 49, $3.70 each; 50 up, $3.60 each.
THREE-POUND PACKAGES—1 to 9, $4.95 each; 10 to 24, $4.85 each; 25 to 49, $4.70 each; 50 up, $4.60 each.

Untested queens, 1 to 11, $1.00; 12 to 24, 85c; 25 to 99, 80c; 100 up, 70c. Select Untested queens, 1 to 11, $1.25; 12 to 24, $1.00; 25 to 99, 90c. Tested queens, 1 to 11, $2.00; 12 to 24, $1.75. Select tested queens, 1 to 11, $2.50; 12 to 24, $2.25.

Safe arrival guaranteed.

REMEMBER: THRIFTY BEES ALWAYS PLEASE.

W. J. Forehand & Sons, Fort Deposit, Ala.

Superior Italian Queens

TO JUNE 15th: Untested, 1, $1.00; 10, 85c each; 100, 75c each. Tested, 50c more.

* * * * *

AFTER JUNE 15th: Untested, 1, 80c; 10, 75c each; 100, 60c each. Tested, 50c more.

* * * * *

Prompt Shipment. Absolute Satisfaction Guaranteed.

* * * * *

THREE THOUSAND NUCLEI

* * * * *

The Stover Apiaries

Tel. Office, Mayhew, Miss. **Tibbee Station, Miss.**

BEES--FREE DELIVERY

CITRONELLE BEES and QUEENS

Delivered at following prices with satisfaction guaranteed. We do not have heavy honey flows here to wear bees out; have a slow regular flow which enables us to supply good fresh young bees that will harvest the crop for you.

PACKAGE BEES

Select untested queens furnished with package bees. Add 25c to each package if wanted by mail.

Quantity:	1 to 10.	10 to 50.	50 to 500.
2-lb. packages	$4.25	$4.00	$3.80
3-lb. packages	5.25	5.00	4.80

QUEENS

Quantity:	1	12	50	100	500	1000
Select untested	$1.20	$11.00	$44.00	$85.00	$400.00	$750.00
Untested queens	1.00	10.00	40.00	75.00	370.00	730.00
Tested queens	1.50	17.00	70.00			

Tested breeders, $5.00 to $25.00 each.

Remember, when comparing prices, we pay all delivery charges.

The Citronelle Apiaries, Citronelle, Ala.

"Honey Girl" Italian Bees and Queens

A Line-Bred, Pedigreed Strain

Bred for hardiness and productivity. Write for our circular. Learn the facts about this wonderful strain. Get the history of our record-producing foundation stock.

We are equipped to ship twice as many packages and queens this season as last year, therefore can take many more orders. Send us your order today. Advise what date shipment is desired, and in the event that we are entirely booked for that date, we will make shipment on nearest open date, or if notified to do so will return your money. Remittances should be made by post office money order, express money order, or certified check.

Packages shipped combless or with stores on comb by express. These prices are f. o. b. our shipping point.

	1 pkg.	10 pkgs.	50 pkgs.	100 pkgs.
2-pound with untested queen	$3.60	$33.50	$160.00	$310.00
3-pound with untested queen	4.50	42.50	205.00	400.00
4-pound with untested queen	5.40	51.50	250.00	490.00

If tested queens are desired with packages, add only 50c per package to prices quoted above.

NUCLEI: 1 frame brood with 2 pounds bees, same prices as 3-pound packages; 2 frames brood with 1 pound bees, same prices as 3-pound packages; 2 frames brood with 2 pounds bees, same prices as 4-pound packages. (We believe that this is the best buy for a beginner.)

We guarantee to replace any loss or damage in transit, provided the beekeeper receiving the damaged shipment obtains express bad order delivery receipt, with proper notation describing condition of shipment and extent of loss, signed by the express agent, and this receipt is mailed to us with claim. Certificate of health with each shipment.

Shipments to Canada furnished with all necessary papers.

QUEEN PRICES

	1 to 3.	4 to 9.	10 to 49.	50 to 99.	100 or more
Untested queen	$1.00 each.	$0.90 each.	$0.85 each.	$0.80 each.	$0.75 each.
Selected untested queen	1.25 each.	1.15 each.	1.10 each.	1.05 each.	1.00 each.
Tested queen	2.00 each.	1.80 each.	1.70 each.	1.60 each.	1.50 each.
Selected tested queen	3.00 each.	2.80 each.	2.70 each.	2.60 each.	2.50 each.

We replace, free of charge, any queen reaching destination dead or hurt, provided the dead or unfit queen is returned to us promptly in her own mailing cage unopened.

Honey Girl Apiaries, Hamburg, Louisiana

An eyeful of honey

Made in 3 sizes, 2½ lb. cans, 5 and 10 lb. pails. Brilliant and appropriate design in red, green and gold.

ALWAYS bright and eye-catching, always an advertisement of *your* honey; easy to fill, to handle, to sell, to open—what could be better for business than a package like this?

No wonder Canco decorated honey pails are popular in stores and in homes as well as among apiarists who use them.

For examples, details, prices, write to the Canco office nearest you, or to one of these distributors:

Colorado Honey Producers Association, Denver, Col.

Dadant & Sons, Hamilton, Ill.

G. B. Lewis Company, Watertown, Wis.

10 Tivoli Street, Albany, N. Y.
1304 Main Street, Lynchburg, Va.
23 W. 3rd Street, Sioux City, Iowa
318 E. Broad Street, Texarkana, Ark

B. F. Smith, Jr., Fromberg, Mont.

American Can Company

NEW YORK CHICAGO SAN FRANCISCO PORTLAND, ORE. HAMILTON, ONT.

American Can

CONTAINERS OF TIN PLATE · BLACK IRON GALVANIZED IRON · FIBRE